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MAY 4, 1957
VOL. 152—NO. 18

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

PLANTMEN CAN SELL

Shown selling two color telephones and an extension, is General of the Southwest Lineman R. L. Cotter who set the pace during a pre-conversion sales campaign in Miami, Tex. Story on p. 56.

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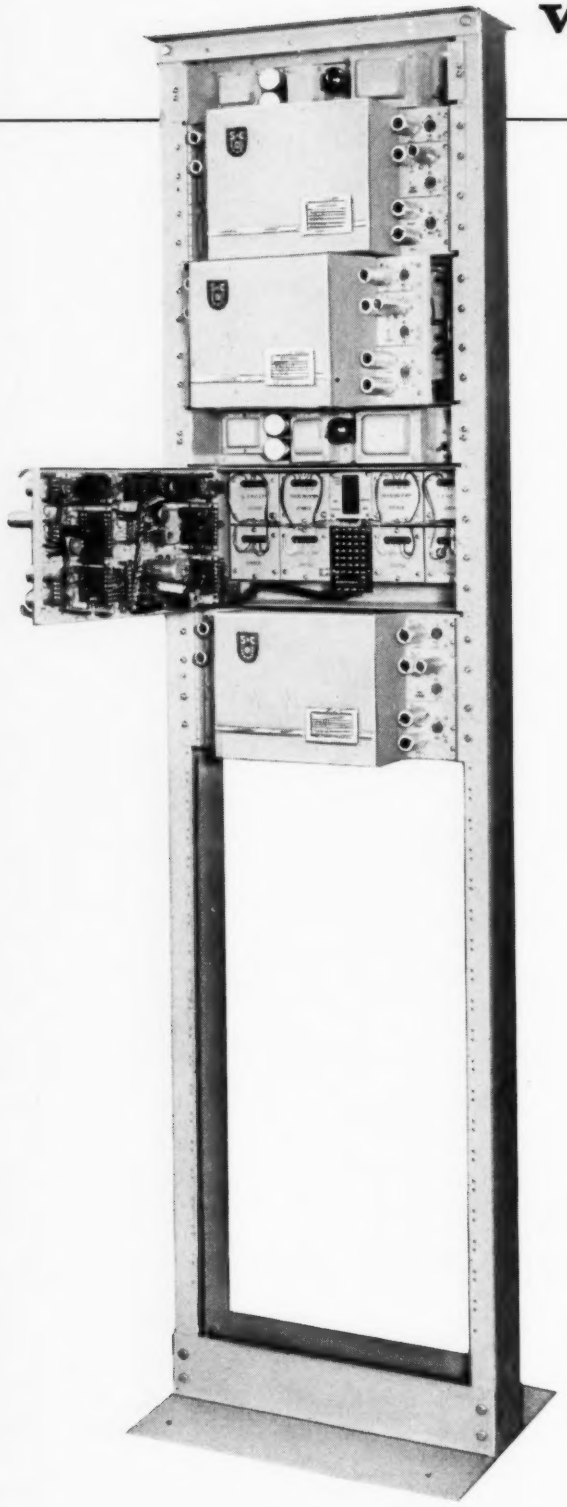

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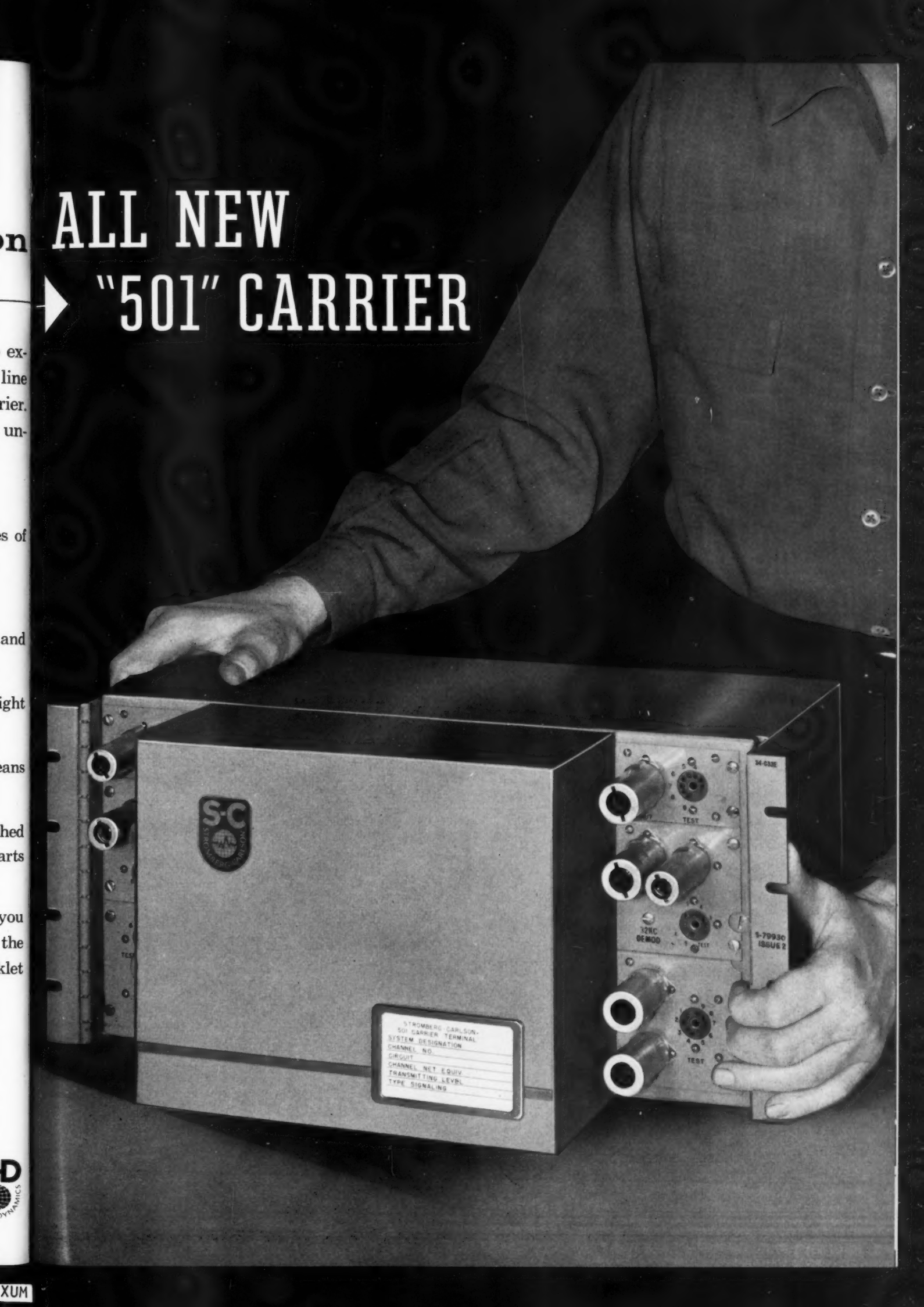
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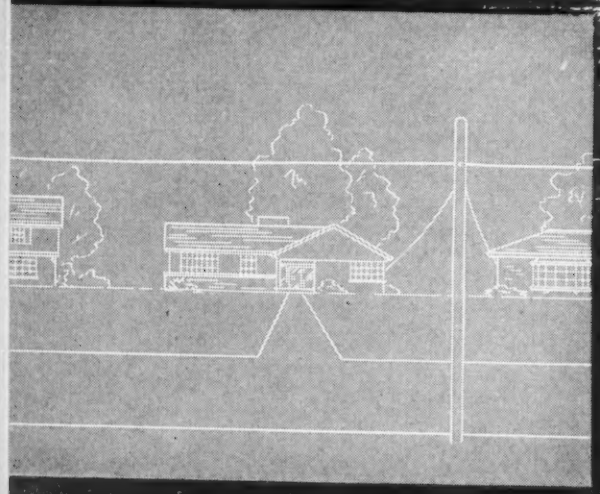

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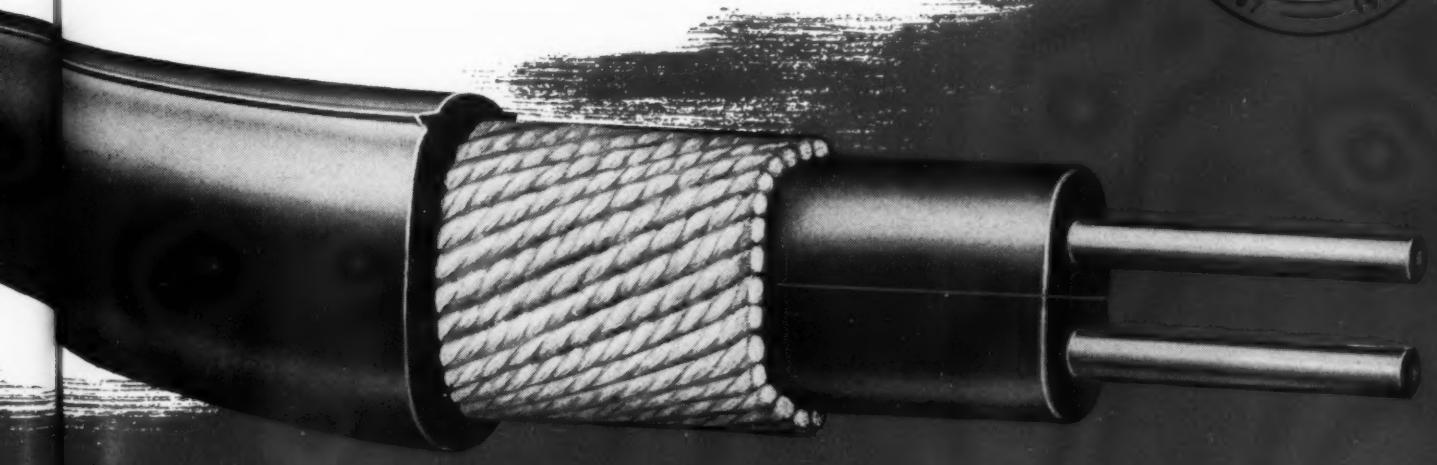

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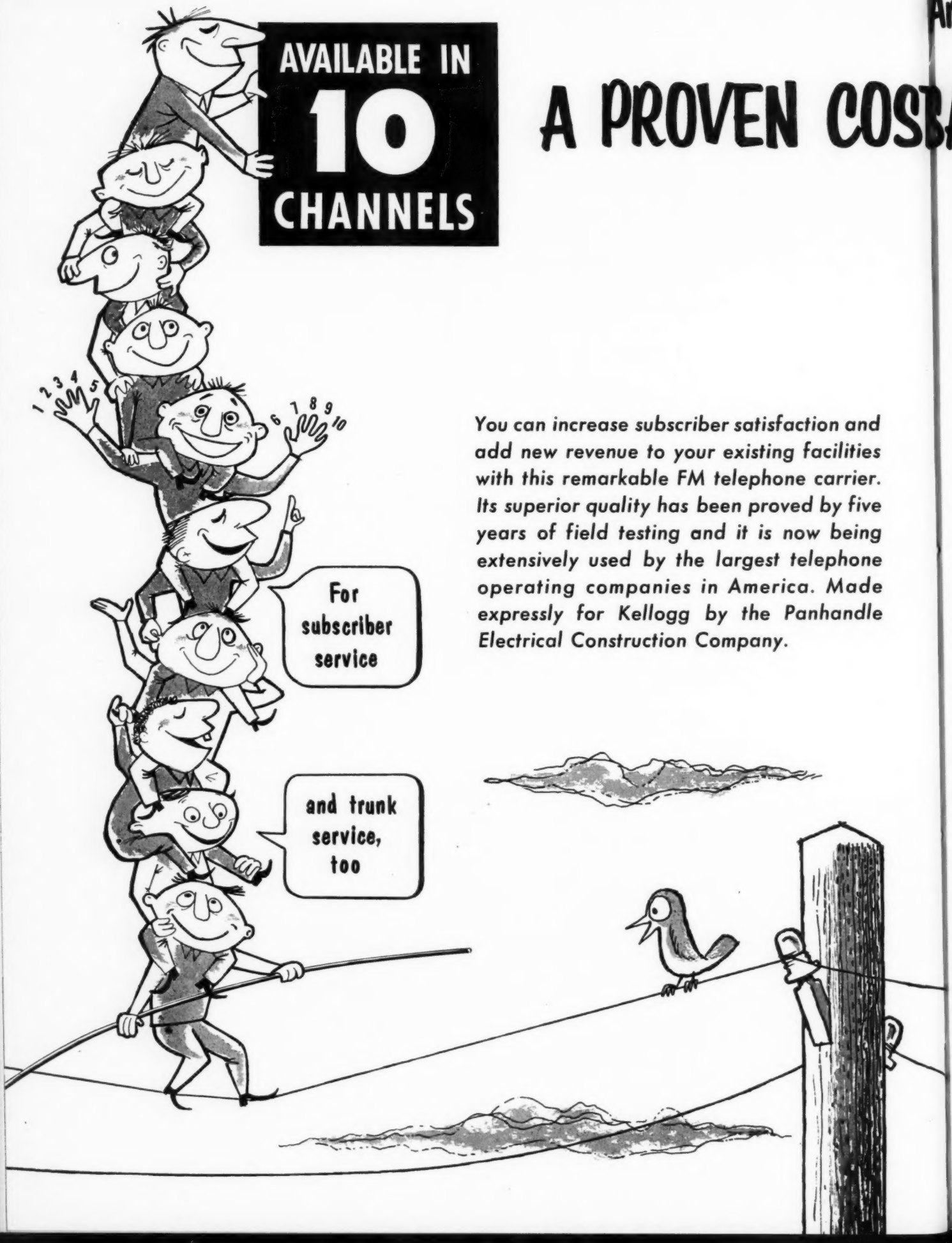

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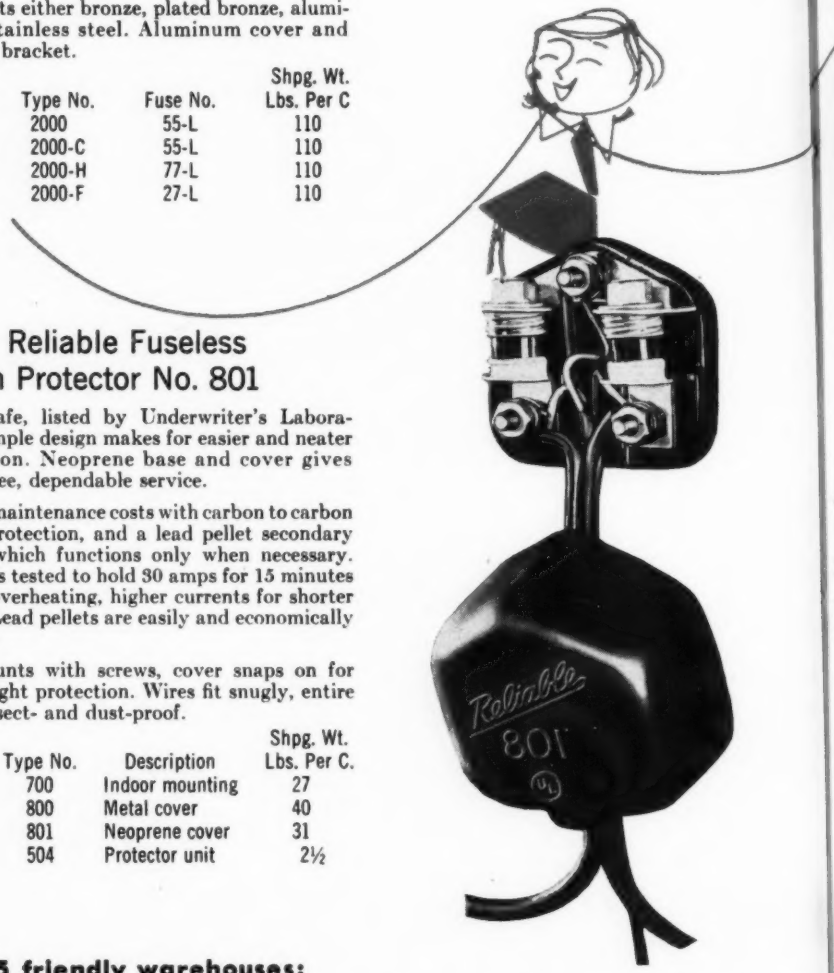
Contoured shield aligns interior wires, keeps them away from line side of fuse connections. Tapered, neoprene base has wire entrance sealing slots; cover fits insect and weather tight.

Metal parts either bronze, plated bronze, aluminum or stainless steel. Aluminum cover and mounting bracket.

Cat. No.	Type No.	Fuse No.	Shpg. Wt. Lbs. Per C
S-8290	2000	55-L	110
S-8292	2000-C	55-L	110
S-8294	2000-H	77-L	110
S-8296	2000-F	27-L	110



New! Reliable Fuseless Station Protector No. 801

Proven safe, listed by Underwriter's Laboratories. Simple design makes for easier and neater installation. Neoprene base and cover gives trouble free, dependable service.

Reduces maintenance costs with carbon to carbon air gap protection, and a lead pellet secondary element which functions only when necessary. Protectors tested to hold 30 amps for 15 minutes without overheating, higher currents for shorter periods. Lead pellets are easily and economically replaced.

Base mounts with screws, cover snaps on for weathertight protection. Wires fit snugly, entire unit is insect- and dust-proof.

Cat. No.	Type No.	Description	Shpg. Wt. Lbs. Per C.
S-2237	700	Indoor mounting	27
S-2236	800	Metal cover	40
S-2241	801	Neoprene cover	31
S-2238	504	Protector unit	2½

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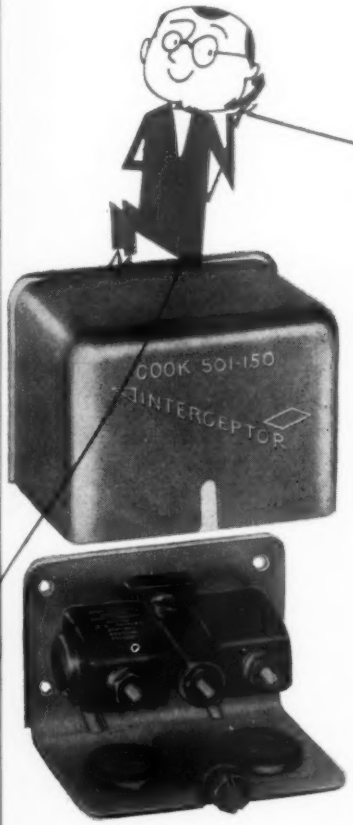


New! Cook Interceptor Fuseless Protector

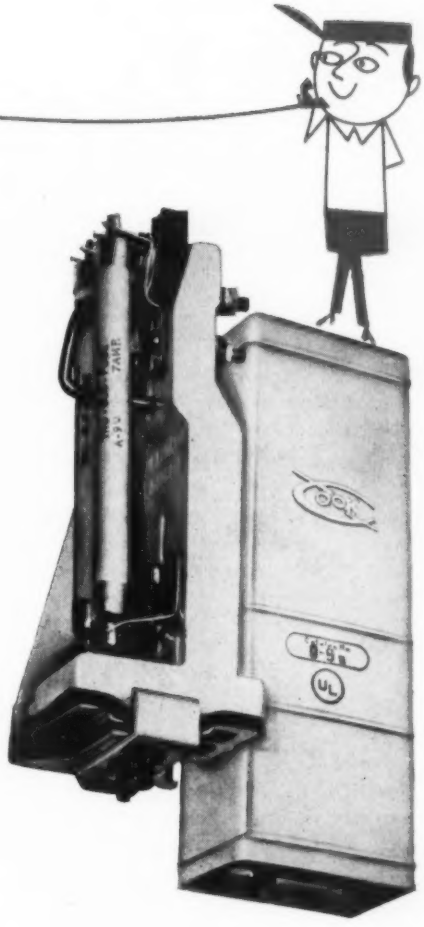
Simple, compact, effective—the new Interceptor combines economical, easy to install protection with minimum maintenance.

Interceptor base is moulded Bakelite with heavy everdur terminal and ground studs. For outdoor mounting the base is enclosed in corrosion-resistant, weatherproof metal housing with grommetted bracket. Indoor model does not have metal housing.

Arrestor units consist of two #41-350 Minigaps both of which will pass a current of 30 amps for 15 minutes without destruction. Discharge flow is provided with a thermoplastic acetate dielectric between the two carbons.

Minigaps are screw mounted in Bakelite base with ground stud moulded in.

Cat. No.	Type No.	Description	Wt. Per 100, Lbs.
S-2231	501-150	Outdoor Model	56
S-2232	501-165	Indoor Model	30
S-2233	41-350	Minigap	2½



TELEPHONE MEN (and women, too) count on Automatic's Supply Service to provide the latest in telephone supply products from dependable manufacturers. The items shown here, for instance, are all U. L. listed, field tested for trouble-free operation.

When you order supplies, don't forget these improved station protectors. Remember, you'll get speedy service by calling your Automatic Representative or your nearest A. E. Sales Corporation warehouse.

New! Cook 0-9u Sub Station Protector

A single circuit protector for indoor or outdoor installation. Equipped with one pair of fuses and one pair of high potential dischargers.

Body is white glazed, low absorbent porcelain. Fuse and lightning arrester clips are of phosphor bronze. Lightning arresters consist of two Tru Gap dischargers and two flat carbons mounted on copper ground strip.

Neoprene gaskets keep out insects, dust, snow, etc. Removable locking device on base.

Cat. No.	Type	Description	Wt., Lbs.
S-8600	0-9u	7 amp, A-9u Lavite Fuses	1¾
S-2201	07	5 amp, A-7 Wood Fuses	1¾
S-8532	07	7 amp, A-7 Wood Fuses	1¾
S-2206	012	5 amp, A-12 Lavite Fuses	1½
S-2208	052	7 amp, A-52 Fibre Fuse	2

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FLASHES AND PLUGS

THE DAY'S ROUTINE. Freak incidents are not exclusive with the telephone business, but surely Illinois Bell Telephone Co. has had its share.

Illinois Bell has had cases of bees stinging company drivers and causing accidents; sparrows trapped in public telephone booths; owls hanging themselves on wires, and woodpeckers feeding on company poles, reported the *Chicago Tribune* in a recent feature article.

The article continued: "Although the company recently reported that the woodpecker and gopher problem had been more or less beaten, last year's incidents involving animals formed a zoo parade which could rival a zoo.

Take for example the case of a repairman called to fix a badly frayed telephone cord. He found it virtually ripped to shreds. After he replaced the cord and was leaving, he saw a full grown lion sitting in the bathtub. The hotel room apparently belonged to a lion tamer.

"Another time a woman subscriber insisted she be given the same telephone number after she moved. It seems her parakeet had learned to say that number, and she was positive he could find his way back if he should fancy flying away. She got the same number.

"Another woman complained recently that her friends had difficulty calling her because her line was always mysteriously busy. While a telephone repairman was in the house investigating the cause of trouble, the telephone rang. Into the room bounded the family's sheep dog. With a swing of his paw he knocked the telephone from its stand. No more trouble now. The telephone has been placed out of the dog's reach.

"In another case, a repairman traced trouble on a 'party line' to an extension telephone off the hook in one of the farm's buildings. He replaced the extension each day, but found it 'off' again the next day. Then the repairman decided to lie in wait by the extension to watch what happened. He found the culprit—a small raccoon. The rascal was caught and taught better telephone manners.

"The telephone company also gets its fair share of unusual people. On the north side there's a lady who believes in being prepared. At any rate she called and asked to have the bell muffled. 'It's on account of the baby,' she explained.

" 'We'll have a man out tomorrow,' she was assured. 'O, it's not that urgent,' she said. 'I won't have my baby for another three weeks.'

"Another woman called to say she was a maid in the home of one of the company's customers. She asked if she could buy an old telephone booth to place in her employer's basement. It seems she was taking saxophone lessons and thought it would be less trying on the household if she were to hold her practice sessions in the telephone booth."

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

May 4, 1957

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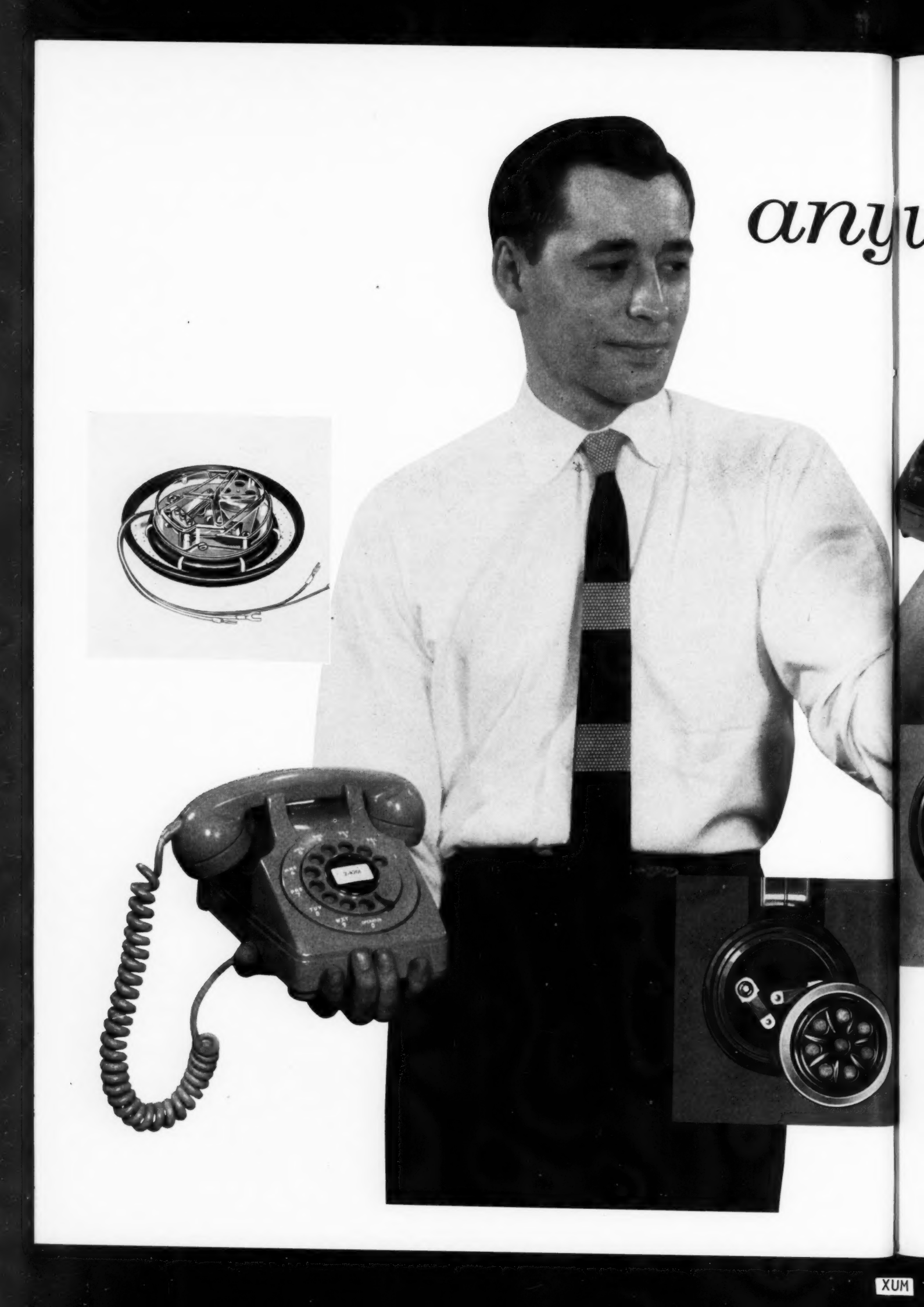
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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Alabama congressman introduces bill to prohibit utilities locating facilities within rights-of-way of federal-aid highways. Pennsylvania gas company waives accelerated depreciation allowance. Further analysis shows telephone industry bigger and better operated than U. S. Post Office.

WHILE NEWS continues to come in from the state capitals about progress on state legislation to allow utilities to get relocation expense benefits, a new attack has broken out in Washington, D. C., to repeal the whole deal at the congressional level. Representative Jones (D., Ala.) has introduced two bills (H. R. 6987 and 6988) to prohibit reimbursement to states for the cost of relocation of utility facilities necessitated by the federal-aid highway program.

The bill H. R. 6987 provides, in addition, that no utility shall be permitted to locate its facilities within the highway rights-of-way for any project on the federal-aid primary or secondary systems in the interstate network, including extensions into urban areas, except for utilities crossing such rights-of-way.

Representative Jones, a leader of the so-called "highway bloc" in Congress, was foremost in the fight during the last session to prevent any reimbursement for relocation expenses with federal funds under the Federal Aid Highway Act of last year and he was not entirely unsuccessful.

Jones' latest attack on this provision is no doubt prompted by the substantial success, to date, of bills in the various state legislatures to change state laws to allow such reimbursements to be passed on to utilities. While there seems little likelihood that the Jones Bill to repeal the provision of the present Federal Aid Highway Act will succeed at this session or in this Congress, it is an indication of the strong and continuing pressure of the "highway bloc" in Congress to cut off relocation benefits in any way possible.

Accelerated Tax Depreciation

Some weeks ago in this department, an analysis was made of state regulatory commission rulings on the treatment of federal income tax deferrals by public utilities to make use of the accelerated depreciation allowances for all corporate taxpayers under the Revenue Act of 1954. It will be recalled that Pennsylvania was one of the few states where public utilities were not allowed, either for accounting treatment or in rate cases, to take advantage of tax benefits under this law for the utility owners.

Any benefit however temporary—under this minority view—must be charged or accounted for in such a way that the ratepayers rather than the utility owners would get them. Comment was made at that time that public utilities (under such circumstances) might just as well refuse to take the accelerated depreciation allowances since they would get no benefits for the management or the owners while the ratepayers might also be misled by unnecessary fluctuations in the rate levels. Apparently that is just about what one Pennsylvania public utility has decided to do—refuse to take the benefit.

What happens then? In allowing gas rate raises for Peoples Natural Gas Co. (to yield 6.4 per cent return on a fair value rate base), the Pennsylvania commission has rejected a contention of the city of Pittsburgh that the allowance for federal income taxes should be only equal to what would be payable had the Peoples Natural Gas Co. adopted accelerated depreciation.

The city of Pittsburgh had contended that, if the company had elected to use accelerated depreciation, the "savings" in federal income taxes from use of the accelerated depreciation would result in an increase in adjusted net utility income of $93,312. The city of Pittsburgh thus raised the following question: "Where a utility has not availed itself of the liberalized depreciation provision of Section 167 of the Internal Revenue Code of 1954, may the commission allow as an operation expense only the tax which would be payable if the utility had so availed itself?"

The Pennsylvania commission stated:

"In the over-all question of allowances for operating expenses, it has been recognized generally that the commission may not substitute its judgment for managerial judgment unless there has been an abuse of managerial discretion.

"It would be argued that where, as in the matter of accelerated depreciation, the utility has exercised an option, granted by law, in cannot be said that the exercise of the option constituted an abuse of managerial discretion.

"If minimizing taxation is permissible, refusal to minimize taxation is, at least, equally permissible. . . . We make no adjustment of tax expenses because of respondent's not accelerating annual depreciation for income tax purposes."

U. S. Postal Utilities

A reference was made in this department recently to Uncle Sam's operation of the Post Office as a utility concern. It has brought some inquiries to this writer about the relative performance of our telephone industry and the Post Office—as the nation's principal communications carriers. By almost any standard our telephone industry is a much larger-size operation. As to dollar volume of business, the telephone industry, with more than 6 billion dollars in operating revenues, is doing just about twice as much busi-

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ness. The U. S. Post Office, with 3 billion dollars of annual revenues, still ranks up near the top of American industrial titans. But it lags behind United States Steel, General Electric, and the two largest automotive combinations.

In the number of employes, half a million workers, the Post Office ranks third. But the Bell System ranks first among the single corporate system employers with nearly 800,000 employes. General Motors is in the follow-up position.

What about the comparison of actual messages? Even here the U. S. Post Office, which carries 60 per cent of the world's mail and operates 40,000 branch offices, is not operating the greatest volume of actual message business. According to Wolfgang Langewiesche, writing in the May issue of *Reader's Digest*, Uncle Sam's mail carries one piece of mail every day for every man, woman, and child in the country.

That would amount to 170 million pieces of mail a day, which is still considerably less than approximately 200 million average daily telephone conversations, including local and long distance.

And if correction were made for really important person-to-person communications handled by first class mail, which would be more reasonably comparable with telephone conversations, the difference would be even more pronounced. But clear statistical classifications, which would exclude parcels, second, third, and fourth class mail, are not available for a more accurate comparison along these lines.

Even the foregoing general comparison of daily mail handled, with daily telephone conversations, show that the balance of really important communications traffic has shifted in recent years from the Post Office to the telephone industry. Before World War I, the Post Office was still the backbone and main channel of personal communications in the United States.

Today all that has been changed. The backbone as well as the nerve center is located in the telephone exchange offices of the nation.

As far as profitable operation is concerned, there is no comparison. The Post Office, which understandably pays no taxes whatever, is spending 2 million dollars a day more than it takes in in revenue.

The telephone industry, on the other hand (and these are Bell System statistics), earned over 13 dollars in net income on every share of American Telephone & Telegraph Co. while at the same time paying $19.54 in taxes per share of the same stock.

Seventy-five per cent of the cost of operating the Post Office goes out in wages. The telephone industry does not have such a relatively high payroll, since much of its operating expenses must be paid out for equipment, supplies, depreciation, and taxes. So, again, no accurate comparison is available.

But it is noteworthy that the political organization of the Post Office has resulted in apparent resistance to mechanization and labor-saving devices which would speed up the mails now being so widely criticized.

A post office official recently released a picture of a group of mail clerks standing around sorting mail. It was taken over a hundred years ago. The postal official explained that the same process is followed today. The only difference is "they wore frock coats in those days."

When you walk into even the largest post office working quarters, the business-minded visitor is struck by the absence of business machinery. Most of the work is done by hand. It is collected by hand from the corner boxes, put into mailsacks by hand, and the sacks are carted by hand to sorting areas where it is sorted by hand.

Many of these operations would be "naturals" for mechanization. Even the process of sorting could be stepped up by the adoption of any one of a dozen devices. The U. S. Patent Office has filing cabinets full of patent applications dealing with this subject. The patents are issued occasionally, but that is the end of it. Any business machinery expert worth his salt would give anything to be let loose in any of our antiquated post offices to be given free run of the place for the adoption of automatic machinery.

The answer, of course, is psychology at the top. Post office management is political management. There is no incentive to save or earn by making operations more efficient. On the contrary, the political pressure is to keep as many jobs available for patronage purposes. And this comment is not intended as any reflection on the high morale and dedicated career service of thousands of the civil servants who carry Uncle Sam's mail.

The same incentive which private business has to save money by the adoption of more efficient and economical operations is turned into a reverse reaction by the substitution of a political incentive. The American people have been sold on the idea that the Post Office is not supposed to make money. They have taken it for granted that the annual postal deficits were inevitable. But the fact that the deficits do not have to be as large and the services do not have to be as bad, is something that is not given very broad publicity from Washington for obvious reasons.

As Mr. Langewiesche's article in the *Reader's Digest* points out, one of the most telling differences between the telephone business and the Post Office is the amount of money spent for research.

The telephone company spends 18 times as much, and the result has given us the best telephone service in the world. But it is still only what has been required to keep telephone operations abreast of the growing service demand.

If, for example, there were no automatic dial equipment and all operations had to be conducted over a manual switchboard, Langewiesche says, "if you drafted every female in the country as telephone girls, they still couldn't handle the telephone traffic!" Maybe the antiquated Post Office is in itself one of the main reasons why telephone traffic has been skyrocketing while the mails become slower and less frequent.

INDEPENDENT TELEPHONE WEEK

In celebrating the 60th anniversary of the Independent telephone business as an organized industry, Donald C. Power, president of the United States Independent Telephone Association, on May 1 issued a proclamation, presented at the right, establishing the week of Sept. 8 as *Independent Telephone Week*. For details of the plan for observing the 60th anniversary see pages 17 and 30 of the March 2 issue and page 56 of this issue.

Bell Rate Cases

Bell System companies won two state rate cases and dropped one during the month of April. In Kentucky the state commission has authorized Southern Bell Telephone & Telegraph Co. to raise rates approximately $3,370,700 a year—about $1,337,100 less than the company asked in its petition last November. The commission estimated that the increased rates would yield a return of 6.35 per cent on plant fairly valued at $97,294,363. The company

(Please turn to page 58)

A Proclamation

★ ★ ★

Independent Telephone Week

Whereas, *Although Independent telephone companies were in existence in the United States several years prior to 1897, it was sixty years ago that these companies became organized and recognized as an industry and the United States Independent Telephone Association was given birth; and*

Whereas, *In the intervening years the Independent segment of the telephone industry has prospered and grown and today Independent companies serve 9,000,000 telephones and have an aggregate plant investment of $2,325,000,000 more than 100,000 employees and 200,000 stockholders; and*

Whereas, *There are 4,400 Independent companies which provide telephone service through 10,870 public telephone exchanges to people living in two-thirds of the geographical area of the United States and its territories; and*

Whereas, *Independent telephone companies and their manufacturers are entitled to the credit for numerous significant technological developments in the art of telephony, such as the dial telephone, selective ringing, subscriber toll dialing, and automatic toll ticketing; and*

Whereas, *Independent telephone companies together with their manufacturers and suppliers and related firms are a vital, vibrant part of the American free enterprise system and their importance to the economic and social welfare of the United States should be officially proclaimed; and*

Whereas, *It seems fitting that a suitable period should be designated and set aside for due observance of the sixtieth anniversary of Independent telephony in this country;*

Now Therefore, *In accordance with the powers vested in me as President of the United States Independent Telephone Association, I hereby issue this proclamation establishing the week of September 8, 1957, as INDEPENDENT TELEPHONE WEEK and request all Independent telephone companies and their manufacturers, suppliers and related firms and the public generally to pause in their appointed rounds in order to recognize and pay tribute to the loyal men and women who have made our industry great, to contemplate their achievements extending over sixty years of the country's history, to give thanks that a calling so essential to the public welfare is permited to flourish in an atmosphere of freedom in a free nation, and to take such further action to commemorate our sixtieth anniversary as may seem fitting and proper.*

Dated this 1st day of May, 1957, A. D.

ATTEST:

UNITED STATES INDEPENDENT TELEPHONE ASSOCIATION CORPORATE SEAL STATE OF ILLINOIS

George C. Richert
Secretary

Dewain C. Power
President

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

ONE OF THE MANY duties of a Chief Operator is, maintaining the interest and cooperation of the employes in her department. She must be constantly alert in the development of new ideas to improve the service.

In a recent issue of "The Service Assistant's Bulletin," (Southern Bell Telephone & Telegraph Co.) Jessie Buford, Service Assistant in the Jackson, Miss., exchange, related what is being done in her office stating:

"For some time now we have been working with our Development plan and have come to feel that we are really a part of this organization, and that furnishing good customer service is a joint responsibility of all employes. We have also realized that our operators are our greatest asset in furnishing this service and that giving them proper training, development, and encouragement is really an interesting assignment.

"We Service Assistants got together and talked this over and decided on a plan to recognize the good job our operators are doing in giving fast, accurate, and pleasing service. Of course, we could not by observation alone select the best operator in the office, for each of us felt that ours was the best. We decided on a point system that would be based on quantity and quality, as well as accuracy. Each time an operator had a board full of connections the Service Assistant made a record and turned it over to the Chief Operator at the end of the day. We made a 'Hall of Fame' poster showing the Service Assistant and Chief Operator groups.

"A gold star with a value of one point was placed by the operator's name for each position tie-up reported. A silver star valued at ten points was given for each customer commendation. Perfect billing service was recognized with a green star valued at five points. Perfect service observations for the month entitled the operator to a red star valued at ten points and perfect attendance was indicated with a blue star valued at ten points.

"At the end of the month our 'Hall of Fame' had become a veritable rainbow! Fort Knox would have envied our collection of gold. We found we had gained more of everything that goes into making the job more pleasant and efficient; more customer commendations, more perfect attendance records, more accuracy in billing, more efficiency in operating, and most of all more satisfaction out of our jobs.

"This has indeed been a pleasant and profitable experience, and as we go into the second month of this program, with slight variations to add new interest, we find evidence of more enthusiasm than when we first started. If we needed convincing, we have certainly been made to realize that people are the most important part of our business, that service is our most important product, and that recognition and encouragement is the 'frosting of the cake.'"

Here is an idea that can be used effectively in many telephone exchanges. May I not emphasize the benefits derived from this plan by restating them in Jessie Buford's words:

(1) Gain in more of everything that goes into making the job more pleasant and efficient.
(2) More customer commendations.
(3) More perfect attendance records.
(4) More accuracy in billing.
(5) More efficiency in operating.
(6) More satisfaction out of our jobs.

Certainly these are worthwhile achievements and, in addition to the gains obtained, I am confident this procedure also made the Service Assistant's job more interesting and satisfactory.

If you have tried out a plan in your office which has obtained satisfactory results, why not send it to the writer of this column so that others may be benefited by your experience, by its publication in "The Operators' Corner?"

That is one of the many fine things about the Telephone Industry. We are always ready and willing to share our experiences with others for the mutual benefit of all concerned—the industry, the customers, and the employes. We don't hide what we have learned under a barrel to conceal it from others. The Bell Telephone System, for example, is always ready and willing to share what it has learned, sometimes at great cost, to folk in the Independent industry, and this spirit of sharing results in better telephone service to customers everywhere.

Traffic Questions

(1) On a local trunked connection where the front supervisory signal flashes while the busy signal is on a connection, how should the operator proceed?

(2) On a local trunked connection where the front supervisory signal does not flash while the busy signal is on a connection, if you hear the busy signal when for any reason you cut in, what action should be taken?

(3) If a called station is slow in answering on a ringdown trunk connection, when should the "A" operator cut in?

(4) On a local call, when should a don't answer report be given?

(5) If a local operator has a call to a locality where it is customary for stores to close one afternoon a week and the operator knows the number called is that of a store which is normally closed for the afternoon and there is no answer within two minutes, what should the operator say?

Answers are presented on page 62.

Extra Care on Weekends

Weekends are the most dangerous time to be on U. S. highways. In 1956, more than 56 per cent of all fatalities occurred on Friday, Saturdays and Sundays.

XUM

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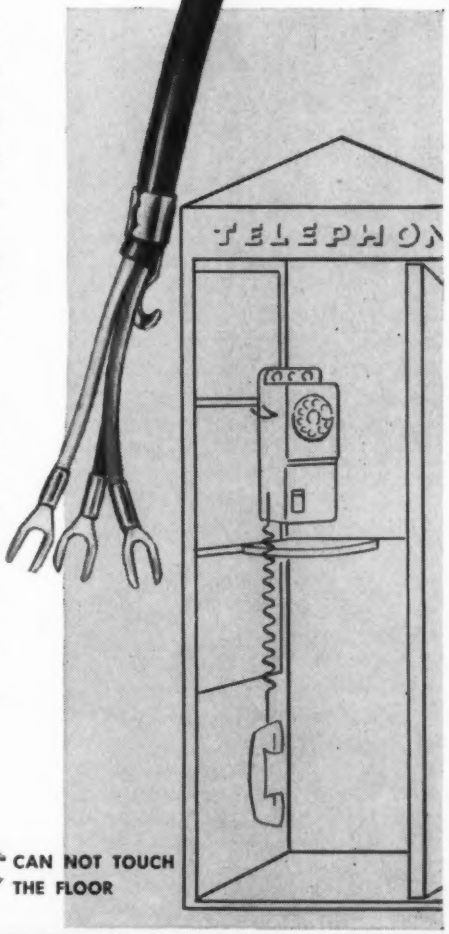

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Planning Today for Tomorrow's Progress

By DONALD C. POWER*

THE OHIO Independent Telephone Association convention will always be a homecoming to me. But I am especially proud and honored on this occasion to be able to address you as the president or leader, during the current year, of the United States Independent Telephone Association. Furthermore, it just so happens that I am privileged to bring you greetings of the USITA on the occasion of its 60th anniversary, which we are celebrating this year. And since one of the first decisions a leader has to make is to figure out whether he is being followed, or whether he is being chased, let me hasten to add that this 60th birthday celebration of the USITA was a popular and spontaneous choice of our board and most of our membership.

I note with great interest that your Ohio association has also set aside the year 1957 for emphasis on a program theme of the greatest importance to Independent telephony — "Tomorrow's Progress Is Today's Planning." I do not believe you could have selected a more timely subject, because long-range planning is just what our Independent telephone industry must do, if it is to take its proper place in the future of our national economy. Of course, one of the best things about the future is that it only comes along one day at a time. That gives us a chance to adjust our plans, if our plans were not so good in the first place.

The first prerequisite of sound planning is to know what our job is, to know where we want to go, and to know what we are trying to do. So, what is our job? Our job is communications—in its most modern, intimate, and confidential form. In this we share with other media, such as television, radio, and the press, a grave responsibility. From time immemorial, the art of communications between members of the human race has been the mother of knowledge, the source of wisdom, and the guardian of history. No nation, no civilization has ever been any better or more progressive than the development of its art of communications. On the contrary, many ancient and forgotten peoples of the earth have been buried in the dust of oblivion because they had found no way or means, no systematic plan for communicating their thoughts and deeds to others, or for leaving any record of their achievements behind them.

It is a sobering fact that our telephone industry, within barely three quarters of a century from its birth, is now handling by far the greater part of the entire load of really important personal and business communications in the United States. Bell and Independent companies are now handling daily telephone conversations in the order of 200 million calls—more than double the volume handled at the end of World War II in 1945. And, there is good reason to expect that that load will again double within even a shorter space of time in the future. This is really something to think about and to plan for.

Planning a Goal

When we even use the word "planning," we simply imply that we have a firm purpose—a goal. Otherwise we are not planning at all. We are only improvising. Fortunately for us, in the telephone business, there is no question about what our goal is for the future. The telephone industry has a destiny. It is just about as inspiring a destiny as any business enterprise could have. It is public service. And, yet, this very obligation of the telephone industry, to serve the public, imposes on us a special responsibility. We are, in a sense, trustees of the public interest. We can never lose sight of that, from top company management down to the very latest recruit on the industry's payroll.

In planning today for tomorrow's progress, we are confronted, at the very outset, with certain imponderables —things which we cannot now foresee, things which may or may not happen, and which, nevertheless, are bound to have a tremendous impact on our plans. Another war or economic recession, continued inflation, heavy taxes—all these are things we just have to take as we find them, from day to day, and stay constantly alert to any sign of change. We cannot, for example, plan for inflation. We have to plan in spite of it, knowing that to the extent that inflation continues and grows more severe, our planning is going to come under that much more pressure. Inflation has been defined as a state of affairs where we never had it so good or parted with it so fast. Anybody who has been operating a telephone company during the last few years knows just exactly what that means.

Yet, despite these imponderables, Independent telephone companies can lay their plans along certain lines which *can* be foreseen, if not controlled. Such matters as population trends, financial trends, and even regulatory trends are developments which we can follow closely. By careful adjustment, it is possible to take advantage of these trends, instead of finding ourselves trying to buck them. To put it another way, the nature of our telephone business is such that we are able to "cooperate with the inevitable"—as they used to say about the undertaking business.

As for population trends, it is unnecessary to repeat here the point which I have often made before and which is well known to you. I refer to the fact that our Independent companies are situated in a favorable position for future business growth, if it is properly cultivated. We have only to note subscriber station growth of many of your companies right here in Ohio to realize that such a development is already well under way. Many Independent companies are today standing on the very toll road of the future. More and more business traffic is headed our way. But just like any toll road, we have got to make sure

*Mr. Power is president of General Telephone Corp. and United States Independent Telephone Association. He presented this address at the recent convention of the Ohio Independent Telephone Association.

that quality and convenience of our service are well worth the charge we make for them. Otherwise, we may find our future traffic taking a detour.

Four Phases of Planning

Looking over the general field of present planning for future progress, I would like to suggest four categories as worthy of special attention: First, plant requirements; second, financing requirements; third, revenue requirements; and fourth, new business promotion.

We have to recognize, of course, planning in business is not always a popular job. It has sometimes been called a systematic way of looking for trouble. And, sometimes, it can lead us into situations where we have to clean up after somebody else's planning. It is possible to land in a spot similar to the old mountaineer, who was being lectured by a judge for taking a shot at his own son-in-law. The old fellow admitted he was in the wrong. But he said: "Judge, none of this trouble was any part of my planning. You see at the time I took that shot at Jimmy, he wasn't my son-in-law at all. But by cracky, he is now!"

After all, in some degree, planning is everybody's job, in every part of the telephone business. Too often, I am afraid, some of us may be inclined to look on planning as the exclusive responsibility of top-level management—something for the front office to worry about. But when we get right down to hard facts, management is usually at the receiving end of the raw data, the statistics, the estimates, the timetables, and proposals which must be contributed in the first instance from the operating and specialized branches of the industry.

The engineers and research experts, the accountants, the financial and regulatory experts—these are the people who know from actual experience what can be done. True, the end result, the final decision on planning must be that of a company's management. But, that usually takes the form of a translation and coordination of the ideas and proposals passed along by others without which management could not make sound decisions. So, I repeat, planning is everybody's job to a certain degree.

Investment Increase Great

Under our first topic of plant requirements, one of the most challenging problems of the telephone industry is the increasing proportion of plant investment to subscriber station growth. We all know that telephone plant investment, in terms of dollars, has increased far more rapidly in recent years than the number of subscribers. Just since 1950 the number of Independent company telephone stations has increased 42 per cent (from 6.3 million to 9.1 million). That sounds like a pretty impressive gain. The percentage of Bell System station gain was about the same for that period. But compared with that 42 per cent station gain since 1950, the Independent industry's plant investment, as a whole, has increased 120 per cent (from little over 1 billion to 2.3 billion dollars). Bell System investment since 1950 has increased about 70 per cent.

How long will this disparity continue and what can be done about it? We know, of course, that physical plant requirements of the telephone industry must expand greatly in future years. But what can be done in our planning to offset the increasing discrepancy between the dollars invested and the customers added? Here is a problem that is going to give us trouble unless we find some good answers.

The most obvious approach, of course, would be to increase station revenues—through rates and supplemental services. I will have a little more to say about that later on. But is that the only answer? I am hopeful that our engineering and technical people will give us some help on this. If future plant designing and organization can take such advantage of improved technology that some of this difference between required investment and business growth can be absorbed, that could go a mighty long way towards whipping a most persistent and difficult planning problem for all telephone companies.

And, we have good reason to expect that automatic processes will help to fill in this gap. Up to now, automatic developments have been considered chiefly from the standpoint of service and operating efficiency and economy. But in the future we may have to rely on automatic plant improvements to give our companies more mileage on the investment dollar per station. We hear of promising things in the field of electronic switching and of multiple use of existing plant facilities, through time pulse and other improved techniques. The industry is going to need all of this kind of help it can get to make its plant dollar go further and carry more of a load in the future.

More Automation Coming

After all, this is in keeping with technical trends in other industries. A director of a national packaging association said recently: "The most expensive thing in the world today is a pair of hands." This implies, of course, more automation whether we like that word or not. But it will not mean any reduction in employment opportunities. On the contrary, it should mean more intelligent and responsible use of the pairs of hands which our industry must hire in growing numbers in coming years. I believe it was the late Phil Murray, former president of the CIO, who said, in 1951, that he did not know of a single, solitary instance where a great technological gain had taken place which did not eventually increase employment opportunities.

Moving now to my second point—planning for financing requirements—we come again face to face with the bugaboo of inflation. More recently this has been coupled with the federal government's efforts to control, or at least check, inflation through its so-called "tight money" policy. I would not be so bold as to say that either inflation or tight money is here to stay, over the short-run or the long-run. But, I do know that in our financial planning today for financial progress tomorrow, we have to make allowances for both.

Most of the financing for the vast amount of necessary future plant will have to come from outside of the industry—meaning new capital. In the Bell System, as a whole, the construction budget of 2.2 billion dollars for the past year required new capital financing in the amount of 1.3 billion dollars. In a recent rate case in New England, a Bell System company estimated that two-thirds of capital for construction planned for the coming year would have to be raised from outside of the business.* Our Independent companies will likewise have much need for new financing. And these demands must be met at a time when all industry is competing in the money market for increasingly scarce investment dollars.

Telephone Securities Attractive

Yet, there is a silver lining. Unregulated industry is likely to have a more difficult job attracting equity capital at the higher cost of money, than it has experienced in the past. Many investors today are adjusting habits which they acquired over the past 10 years, when so much emphasis was placed on investment in common stocks of a dynamic character as compared with public utility securities. During the past year, it has become evident that a considerable change has come over the earnings prospect of other industries. So, many investors are now turning to bonds with yields high enough to compete proportionately with stock dividends in other lines. And,

*Testimony for the Southern New England Telephone Co. before the Connecticut commission, Mar. 19, 1957. Estimated construction was 1.34 million dollars, new outside capital requirements 95.4 million dollars.

in this period of change, Independent telephone companies and other public utilities should be able to demonstrate that they possess special advantages of prospective growth and stable earnings which will appeal to the less speculative investors. Even where company financing takes the form of bond issues and bank loans, the favorable characteristics of the industry should be a help. After all, every kind of business has to pay relatively more for money these days. We even hear talk in Washington about boosting the interest rate on REA loans.

Here, again, much depends on adjusting our financial planning in the light of the changing mood of the investor. The Independent telephone business has much to offer in the form of assured business growth, continued technological progress, and the upward standard of living and new business opportunities. The Independent companies have a selling job to do, of course, in making the investor aware of these opportunities.

But, equally important, we must demonstrate to the investors that future telephone rates will be sufficient to allow Independent companies to cover their revenue requirements. This brings us to my third point, which deals with regulatory developments. It may seem a little unusual to speak of planning for regulatory developments. The regulatory authority is in the hands of the state commissions and admittedly beyond the control of the industry itself. Yet, there is such a thing as regulatory planning and it is becoming increasingly important.

Get Rates When Needed

Assuming, as we have noted before, that present inflationary trends will be with us for awhile at least, it is only being realistic to expect that we are going to have to have periodic rate increases. At the present rate of depreciation and of expanding costs, it may well be that companies will find it necessary to revise telephone rates at five-year intervals or even oftener. This is not a very pleasant suggestion to make. But, as Will Rogers used to say about the farm problem, maybe the time has come to grab the bull by the tail and look the situation right in the face. Much of the difficulty about telephone rates over the last few years can be traced to a certain reticence and unwillingness of companies to admit the need for rate increases until they were long overdue.

Planning for rate cases should include not only careful advance preparation of cases for presentation, but also a suitable timing schedule to get the actual benefit of the rate relief while it is still adequate, and not so long afterwards that it becomes too little too late. It is only common sense to anticipate deficits in earnings instead of doing nothing until they actually occur. A gas utility official, who was recently charged by a Federal Power Commission official with "jumping the gun" because his company filed for a rate increase before a deficit in earnings actually arrived, told a Civil War story of a Union general who had to confer with his staff about a hopeless situation in which they found their troops. It was finally agreed that a general retreat would be ordered the next day. Then one grizzly old veteran spoke up: "General," he said, "would it be all right if I got started back tonight, on account of I'm lame already and I can't keep up with the rest of you fellows after you get started!"

One other rate case factor, which may have to be faced courageously in some of the other states, involves the age-old argument between value and cost. I can speak about this freely here in Ohio, because it is the only state where reproduction cost must be given exclusive and clear-cut recognition in the rate fixing process. As to other states which follow a variety of different methods, I do not believe our Independent telephone people are dogmatic about any particular formula, as long as their rates permit them to do the job they are supposed to do. After all, formulas in themselves are not all important, it is the proof of the pudding that counts, and telephone people have to eat just like anybody else.

But with inflation hounding us, year after year, we can get awfully weary of those who insist that this whole regulatory argument can be permanently swept under a rug of political expediency, nailed down by academic theories that are not working out. It is pure cynicism to contend that a telephone company should go merrily on doing business at the same old rate-making stand, based on strictly original cost accounting which completely ignores the growing erosion in the purchasing power of the dollar. A cynic has been defined as one who knows the price of everything but the value of nothing. At times it seems that some of our professional economists in the public utility field could qualify under that definition.

Regulatory Patchwork

Telephone companies and other utilities cannot go on indefinitely, operating on a cost basis of bygone years, erected on obsolete dollar values, simply because it makes bookkeeping convenient and keeps rate regulation mathematically in balance. In planning future rate cases, therefore, your Ohio example may move telephone companies elsewhere to press for a showdown on this fundamental problem. For a long time, telephone companies in other states have tried to compromise and cooperate with patchwork of regulatory adjustments, which seek to cover up basic defects of earnings deficits. But if inflation keeps on getting worse, the industry's duty, not only to the investor but also to the subscriber, may be to call for a re-examination of this whole setup with a view to bringing yesterday's academic theories into line with present-day realities. That is what seems to be happening in New York State right now.

My fourth point has to do with planning for promotional requirements. Some telephone companies have done some enterprising things along this line in recent months. But it is only a start in the direction of what must be done to make two revenue dollars grow where one grew before—through the promotion of more business in the form of new services and telephone appliances. I am not going to try to tell you what these new appliances are. You are probably already well informed on that. In any event, you can walk outside and see for yourselves the excellent equipment exhibits at this convention, and I hope you will.

But it is a fact—and an encouraging fact, if we want to look at it that way—that the real market for new telephone service products remains very much to be developed. Promotional campaigns for color telephones, extensions, and multi-subscriptions are catching on. Yet, we still have to grow new subscriber markets for other special services and appliances which are coming along faster than they can be sold.

Industry Effort Helpful

In planning such promotion, the individual company can get much assistance from statewide and industry-wide effort, including the advertising programs. But there are still some things the individual companies have to do on their own. Local markets for such new products are not going to develop by themselves. Each Independent company knows, or should know, what are the special characteristics of its own service area. Good planning would suggest surveys of the exact types and varieties of customer establishments in each area. You may find that there is a certain kind of industrial plant, or institution, or other area customer which has a particular need for special telephone services or appliances now available, or which could be adopted.

(Please turn to page 62)

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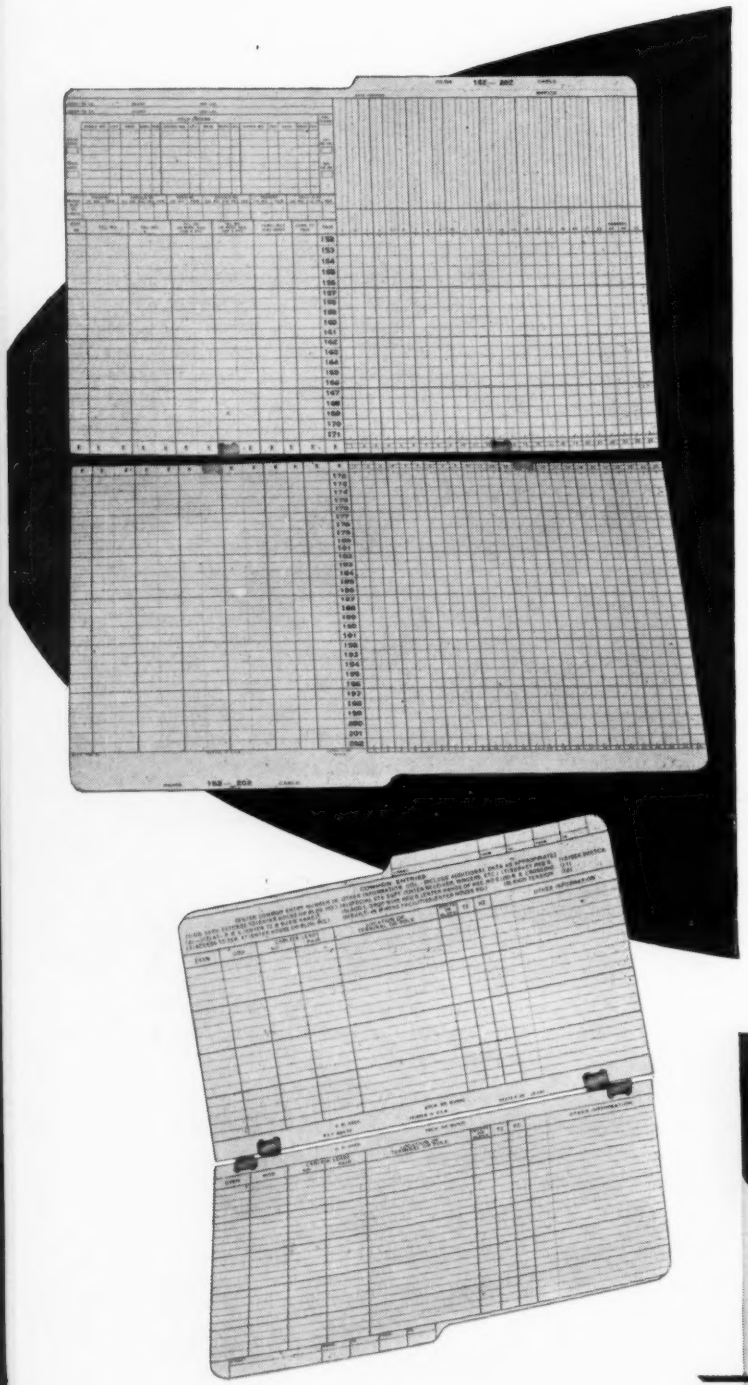


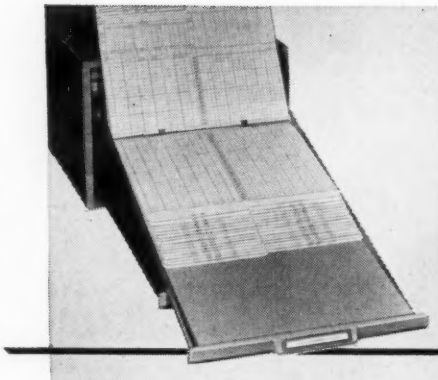
Designed by experienced telephone personnel to accommodate all of the various conditions encountered in the preparation of terminal assignment, exchange subscriber cable, and related basic plant records, in accordance with approved system practices. Simplifies and speeds the work of assignment. Adaptable for large, intermediate and small centers with the flexibility to meet the requirements for peak and normal work loads, varying number of cables, and other local conditions.

CABLE ASSIGNMENTS

Cable assignments forms. With preprinted pair numbers, filed in numerical sequence, exposing a 51 pair complement. Cards are of special Acme Endurex rag content stock to permit repeated erasures and changes. Forms available for 50 terminal capacity and 8 party stations; 44 terminal capacity and 10 party stations; and for unusual conditions.

TERMINAL ASSIGNMENTS

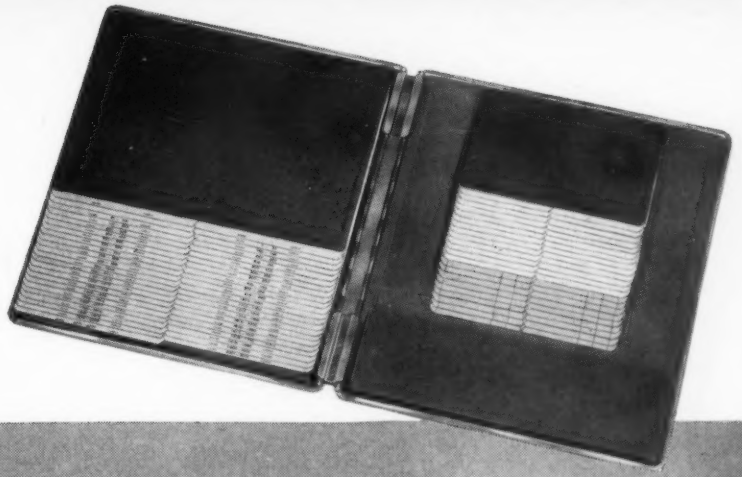
Terminal assignment forms. Eliminate the necessity of referring to supplementary maps to determine the correct distribution cable terminal. Forms available for distribution by (1) street, block or alley; (2) office building or apartment; (3) exchange wire.



Visible cabinets are available in a number of sizes. Each tray has a maximum of 102 forms or the equivalent of 5,100 cable pairs. Cabinets can either be stationary on stands or desks, or mounted on turntables.

Portable stand with sliding shelf, cable assignment book rack holding three books and three vertical trays for subscriber line cards. Developed for smaller telephone offices where one individual handles both cable assignment and subscriber line cards.

LASSIGNMENTS

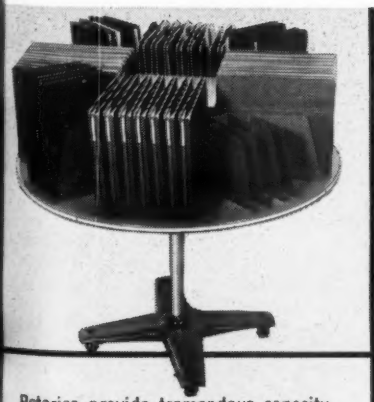


A TOUCH OF A BUTTON BRINGS THE RECORD TO YOU

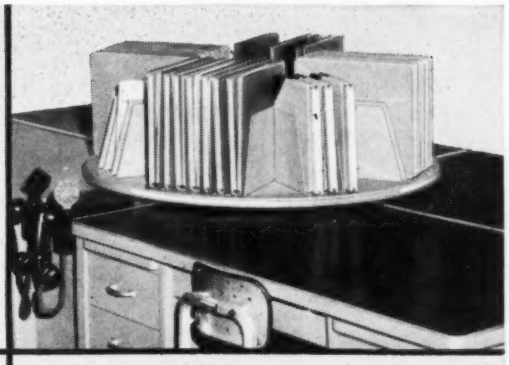
Individuals seated at rotary need not move about to reach records. Books slide in and out without any lifting. Rotaries provide accessability to records at many points around circumference, and permit clerk to do a complete cable throw.

They are designed to house a multiple number of light-weight metal-edged visible books containing many thousands of records.

Motorized Rotary and 6-position Desk Assembly with push-button controls at each position. One of many sizes available for Plant Department Records; Reservation Bureaus; Inventory Records; Records of Shipments; other central-control references and posting requirements.



Rotaries provide tremendous capacity in a compact area and permit instant availability of records to one or more persons. Rotary on pedestal, hand operated and desk height, may be placed next to or between desks, wherever convenient.



This illustration shows rotary placed at the junction of four desks . . . easily available to four persons. Visible card books are filed between spaced divider fins with intermediate divider openings for filing other papers, etc.

Acme Visible equipment has been designed for telephone use by Acme Systems Engineers in close cooperation with practical experienced telephone experts. Tell us your requirements and receive our suggestions and quotations.

T-5

ACME VISIBLE RECORDS, INC.
Telephone System Division, Crozet, Virginia

Please send us illustrated booklet

- ☐ #1088 on Acme Switchboard Keyshelf Units
- ☐ #975 on Acme Flexoline
- ☐ Have representative call. Date.....Time.....
- ☐ We are interested in Acme Visible equipment for .....records
  kind of records

Company.....Attention.....

Address.....

City.....Zone.....State.....

DEPARTMENT OF TECHNOLOGY
BUFFALO AND ERIE COUNTY PUBLIC LIBRARY

A B C of the Telephone

by Frank E. Lee

AS A GENERAL RULE, a manufacturer will make each of his anchors in a number of sizes to meet various anchoring requirements. The following data on soil-anchor holding covers only the smallest and largest anchor of each type made by a particular manufacturer. This data is included here to bear out many of the statements in the preceding paragraphs with regard to the comparative holding strength of the various anchors.

In reviewing this information, keep in mind that the data is based on two basic factors, namely: (1) The physical strength of the anchor, and (2) the effectiveness of each type of anchor in different types of soil and under different conditions affecting the soil. Also, the information is based on the ultimate soil anchor holding strength.

This means that a safety factor must be used when these figures are applied to the problem of selecting the proper anchor for a particular job. Most operating telephone companies use a minimum safety factor of two to one. On this basis if the calculated guy load is 16,000 pounds, an anchor with a soil anchor holding strength of at least 32,000 pounds would be selected.

The following data on soil anchor holding strength is based on anchors set at 45 degree angles and installed to a depth of 7 feet. Anchors set at a depth of 6 feet would have a holding strength of about 15 per cent less. Anchors set at a depth of 5 feet would have a holding strength of approximately 25 per cent less.

SOIL-ANCHOR HOLDING STRENGTH RANGE BASED ON SMALLEST AND LARGEST ANCHOR OF EACH TYPE

Type of Anchor and Soil Classification	*Soil Anchor Holding Strength in Pounds*	
Anchor for Solid Rock	*Smallest Anchor*	*Largest Anchor*
Class 1	25,000*	40,000*

*When set in holes drilled 12 inches deep in solid hard rock these anchors will develop the full strength of the anchor rod.

•

Cone-Shaped Anchor

Class 2	22,000**	55,000†
Class 3	10,000	47,500
Class 4	8,000	38,000
Class 5	6,000	30,500

†Based on ultimate strength of anchor rod.

Expanding Anchor

Class 3	10,000	40,000
Class 4	8,500	34,000
Class 5	7,000	26,500
Class 6	5,500	21,500
Class 7	4,000	16,000

•

Single-Plate Anchor

Class 3	21,500	50,000
Class 4	18,500	43,000
Class 5	14,500	34,000
Class 6	11,500	27,500
Class 7	7,500	21,000

•

Two-Plate Anchor

Class 3	26,500	45,000
Class 4	22,500	37,000
Class 5	18,500	30,000
Class 6	14,500	23,500
Class 7	9,500	18,000

Screw Anchor
Wrench Type

Class 4	8,500	13,000
Class 5	6,500	10,000
Class 6	5,000	8,000
Class 7	2,500	4,500

No-Wrench Type

Class 4	6,000	8,500‡
Class 5	4,500	16,500
Class 6	3,000	13,500
Class 7	1,500	9,000

‡Small size anchors only of this type are recommended for Class 4 soil.

Swamp Screw Anchor

Class 8	6,000	15,000

Installation of Anchors

The angle of a guy wire is determined by the location of the anchor and the point on the pole to which the guy is attached. This means that the anchor rod and the guy wire should be in line with each other. The anchor rod is a continuation of the guy wire through the ground to the point where it is attached to the anchor.

The location of the anchor can be visualized readily by keeping in mind the straight line continuity of the guy wire and the anchor rod. The next step is the actual installation of the anchor.

PART 82. OUTSIDE PLANT CONSTRUCTION—Section 8. Selection and installation of anchors (continued).

Section 1. Planning of additions to outside plant (TELEPHONY, Nov. 17, 1956).

Section 2. Laying out the pole line, clearances to be maintained, and grading requirements (TELEPHONY, Nov. 24, 1956).

Section 3. Selection, treatment, handling, storage, and gaining of poles (TELEPHONY, Dec. 1, 1956).

Section 4. Items of power equipment used in pole line construction and maintenance. Also discussed depth poles are set in various types of soil (TELEPHONY, Dec. 8, 1956).

Section 5. Purpose of guy wires and factors involved in their proper placement (TELEPHONY, Feb. 16).

Section 6. Types of guy wires, how to determine guy loads, and the selection of guy strand (TELEPHONY, Feb. 23).

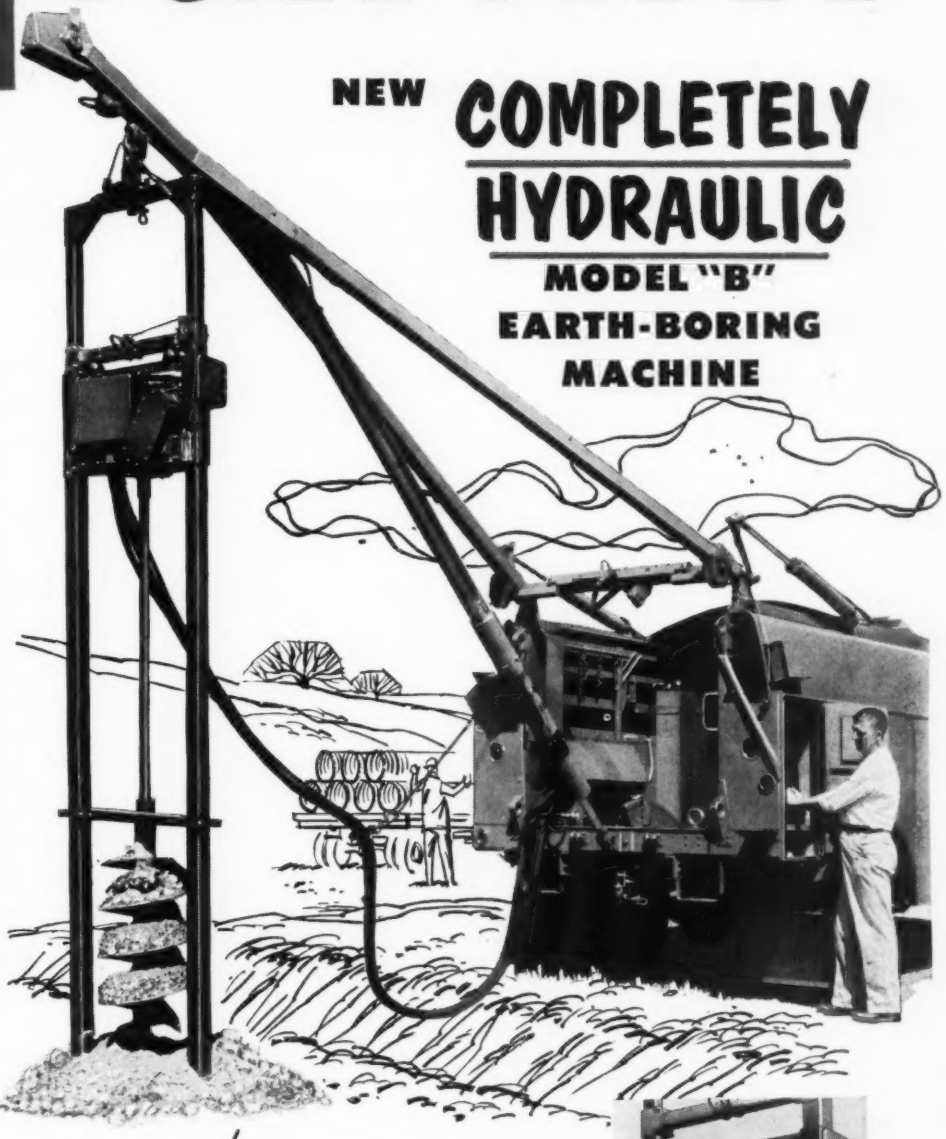
Section 7. Selection and installation of anchors (TELEPHONY, Apr. 27).

HIGHWAY

Digs holes 11 to 22 inches in diameter, up to 7 feet at any angle up to 90°... *all hydraulically*

Here is your answer for easy, safe, convenient digging. A pressure feed hydraulic digger with "fingertip" remote hydraulic controls — that digs rapidly in every type of soil including frost and hard pan. The swivel-mounted digger pivots to dig anchor holes and is operated from the rear of the truck in a convenient standing position. This rugged, suspended-type digger has a "reaching" capacity for hard-to-get-at areas — fits on roof of truck, does not take valuable truck room. With the Model "B" digger in position, the derrick is free for any pole-setting operation. The Model "B" digger can be rear- or front-mounted on any type line maintenance body, with any type hydraulic derrick. This unit is time-tested to insure trouble-free operation.

NEW COMPLETELY HYDRAULIC MODEL "B" EARTH-BORING MACHINE



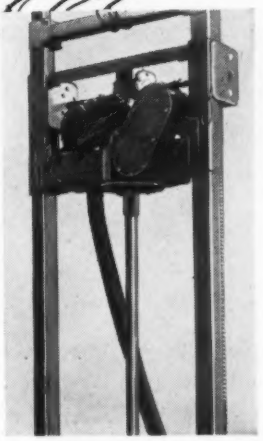
HIGHWAY

A Division of Merritt-Chapman & Scott Corp.

Exclusive! **CHAIN CROWD ASSEMBLY AND "HOLE SIZER"**

Actuated Chain Crowd Assembly assures rapid and smooth downward digging action. The flight auger featuring the "hole sizer" blade cuts a trim hole to diameter desired.

Write for information and specifications



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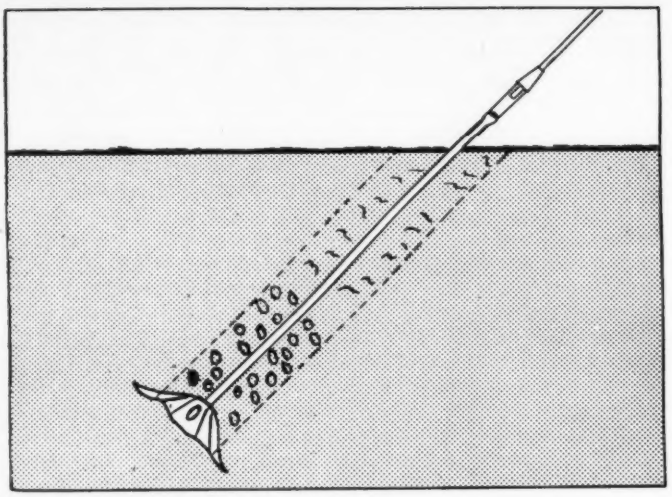


Fig. 1

From the viewpoint of general installation procedures, anchors can be divided into three categories, namely: Cone and expanding anchors, plate type anchors, and screw type anchors. Before proceeding with the discussion of anchor installations it should be kept in mind that the intent of this article is to present the important principles of anchor installations. Specific installation information on a particular anchor can be obtained from the manufacturer of the anchor.

Cone and Expanding Anchors. Installation of a cone or expanding anchor is as follows:

(1) Bore a hole for the anchor at the correct location; to the proper depth (usually about 7 feet) and in line with the proposed guy wire.

(2) Tamp the bottom of the hole smooth to facilitate placing the anchor in the correct position.

(3) Slide the anchor to the bottom of the hole. If an expanding anchor is being installed, the anchor should be expanded fully while being held in position against the bottom of the hole.

(4) Replace the soil that was removed from the hole. If a cone anchor is being installed, cover the anchor with a layer of small rocks which should be tamped thoroughly to wedge the rocks between the anchor and the sides of the hole. Fill the hole by tamping layer after layer of rocks, shale, and soil around the anchor rods until the hole is filled.

If an expanding anchor is being installed, the layer or rocks on top of the anchor is not too essential. However, a mixture of small rocks with the dirt at the beginning of the fill helps to key the backfill and provides greater holding strength for the completed installation.

The pull on a cone or expanding anchor is directly in line with the hole that was bored to install the anchor. From this, it would appear that the anchor could be easily pulled from the hole. However, if the backfill is completed properly, the anchor creates a wedging action to distribute the load evenly to the undisturbed soil around the original hole above the anchor. A cone anchor installation is illustrated in *Fig. 2* of Section 81 (TELEPHONY, Apr. 27). A completed installation of an expansion anchor is shown in *Fig. 1* of this section.

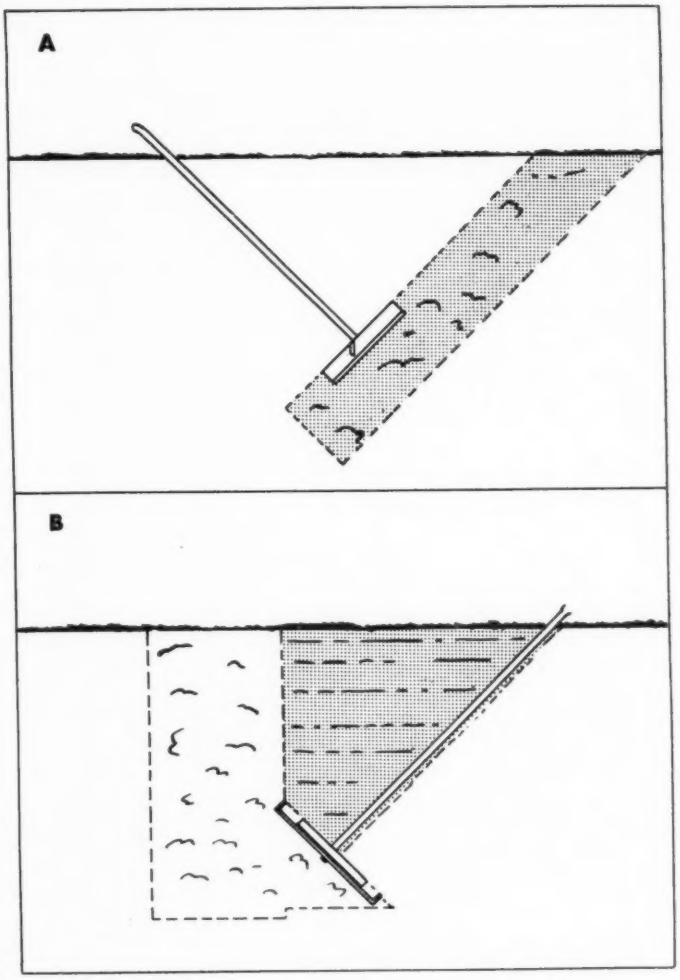


Fig. 2

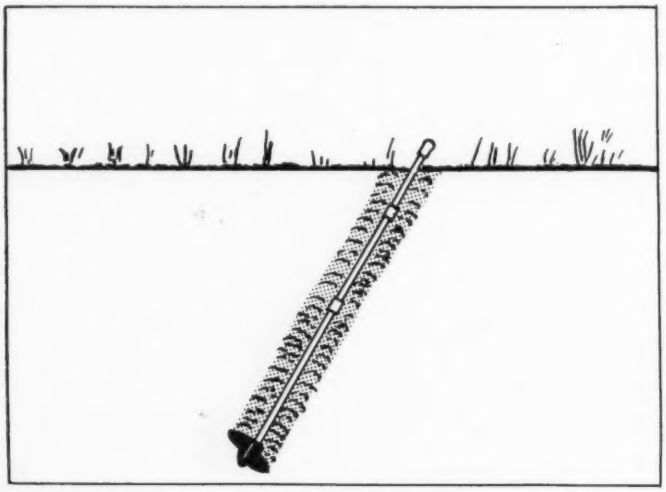


Fig. 3

Plate-Type Anchors. Plate type anchors are installed to place all of the pull against undisturbed earth. For the purpose of this discussion of anchor installations, undisturbed earth is soil which is not removed or otherwise

(Please turn to page 63)

ESCO RINGING EQUIPMENT

MEMBER

DRIVE MOTORS

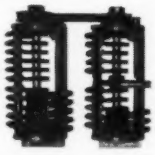
with *permanently* accurate speed regulation

In telephone ringing equipment, accurate speed regulation for the drive motors is one of the vital factors affecting equipment performance. But accurate regulation alone is not enough — it's regulation that stays accurate for the entire life of the equipment that counts.

In ESCO ringing equipment, all drive motors for DC operation incorporate speed regulators of unusually rugged design. These long-lasting regulators were originally developed to meet the strict standards for naval and marine applications where high accuracy calls for corresponding ruggedness and dependability as well. Drive motors for AC are reluctance-synchronous types to assure reliable built-in regulation over the widest fluctuations in motor loading and voltage supply. ESCO motors are built to order in every type and rating for standard and special power sources. Each incorporates the extra refinements that are the result of ESCO's forty years of experience in designing and building special rotary electrical equipment.

Look into the full facts on ESCO drive motors and other ringing equipment components — see for yourself why so many equipment engineers and suppliers choose ESCO — *send for free booklet today.*

Lifetime drive motors



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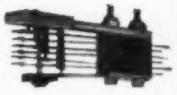


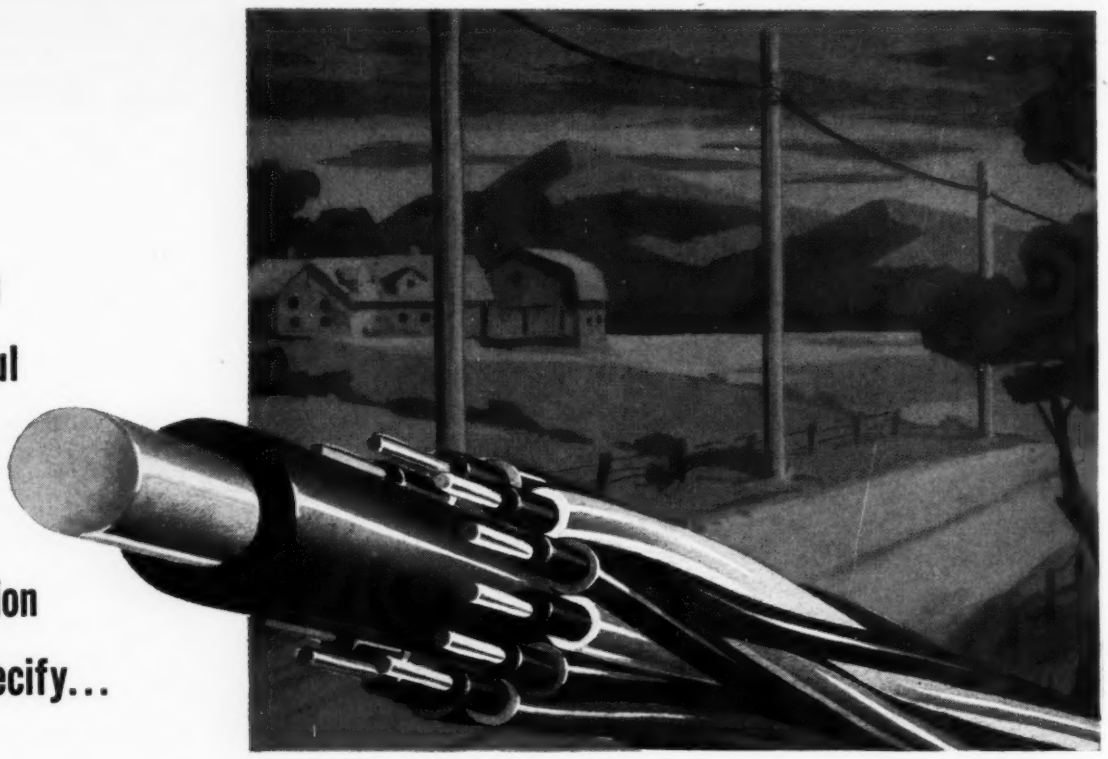
Screw adjusted pile-ups

Permanently aligned drives

ADDITIONAL ESCO FEATURES (details in future ads in this series) explain why ESCO components are included in the installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard Supply Co., Leich Sales Corp., Stromberg-Carlson Co.

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut

For long-term successful service and satisfaction users specify...



GENERAL CABLE

DISTRIBUTION WIRES

Distributed by:
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RURAL Black, high-molecular-weight polyethylene insulation ensures maximum resistance to environmental cracking, weathering, and abrasion. Applied over support wire as well as over the conductors. Tough, abrasion- and weather-resistant, color-coded PVC compound over insulation of each conductor gives added protection as well as rapid, positive polarity identification. Staggered pair lays minimize crosstalk. Controlled cabling permits easy access to support wire. 19 AWG Rural Distribution Wire is available in 1, 2, 4, 6, 11 and 16 pairs.

SUBURBAN Suburban Distribution Wire is a first cousin of Rural Distribution Wire, being of similar construction except the conductors are supplied in size 22 AWG. Available in 6, 11 and 16 pairs.

URBAN A specially-developed, color-coded PVC compound provides extreme weather resistance to conductors of General Cable Urban Distribution Wire, assuring excellent electrical characteristics for the short spans common to urban wire use. High-molecular weight polyethylene insulation over support wire minimizes environmental cracking and weathering. Staggered pair lays minimize crosstalk, superior cabling lay permits easy attachment to support wire. Available in size 24 AWG, 16 pair only.

GENERAL CABLE CORPORATION, 420 Lexington Avenue, New York 17, New York. Offices and Distribution Centers Coast-to-Coast.

for quality and service . . . **specify GENERAL CABLE**

Maintenance Testing Equipment

By JOHN A. BRACKEN

THE TRANSMISSION range of a telephone transmitter is restricted, due to low voltage operating current, to a relatively short distance. It is therefore essential to use some device capable of increasing the distance speech may be transmitted. This is accomplished by the use of an electromagnetic component of the telephone, called an induction coil.

The induction coil has no moving parts, but consists essentially of two principal features—a magnetic circuit and an electrical circuit. Its action is so coordinated with the operation of the telephone transmitter and receiver as to make the telephone very efficient for both transmitting and receiving speech over long distances.

Although the design and construction of telephone induction coils differ, present practice is to provide telephone sets with anti-sidetone type induction coils. These consist of three windings, a primary, secondary, and tertiary, surrounding a magnetic core in such a manner that the secondary is wound over the primary, and the tertiary over the secondary. The three windings are well insulated from each other and from the core.

There are two general types of cores, the open and the closed. These are built up to the required cross-sectional area from suitable magnetic material, as for example, punchings from thin sheets of annealed soft iron, called laminations, which comprise the magnetic circuit of the induction coil.

The open core induction coil is one in which the ends of the core are far apart. When the primary winding is energized and the magnetic flux induced in the core, the magnetic circuit must be completed through the air between the ends of the core.

This results in considerable magnetic leakage due to the air opposing the passage of the magnetic flux.

The closed core induction coil practically eliminates magnetic leakage. Except for a small air gap, the core is built in the form of a hollow rectangle to provide a continuous magnetic path.

This provides maximum concentration of magnetic flux in the core with relation to the windings, resulting in negligible leakage in the magnetic circuit.

PART 79. The preceding article in this series appeared in the April 6 issue, page 34.

During a telephone conversation, there are certain power losses in the induction coil core, known as iron or core losses, such as:

(1) Hysteresis (opposition to magnet change). This means that a slight power loss occurs in overcoming the magnetic lag of the iron used in the core.

The variable frequency voice currents flowing in the induction coil primary winding set up a magnetic flux which changes with the current variations. The iron core offers a certain resistance to this change, and this is called the hysteresis loss.

This effect occurs both in magnetizing and demagnetizing the core, and its intensity is in direct relation to the variations of the current.

(2) A second core loss is that due to "eddy currents." Because the iron core is a conductor, the rapidly varying change in the magnetic flux, which occurs when the variable frequency voice currents pass through the primary winding, sets up an induced current within the core itself as well as in the secondary winding.

The current induced in the core is called an eddy current, because it flows in small circles entirely within the core where it serves no useful purpose. Instead it tends to impede the proper action of one winding upon the other, while at the same time producing heat in the core.

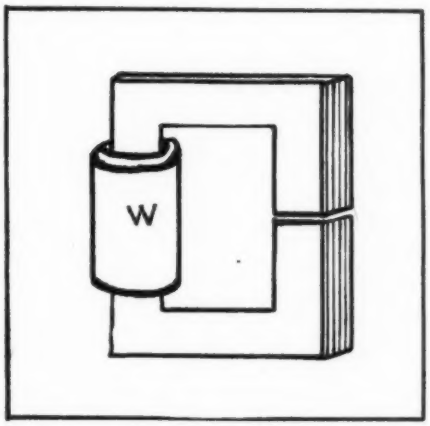

Fig. 1

In order to reduce the development of the eddy currents in the core to a minimum, resistance must be placed in their path. This is the reason the core is made in laminated form.

During the processing of the sheets of iron from which the core laminations are punched, a thin layer of iron oxide is formed on the surface and this serves to insulate the core laminations from each other.

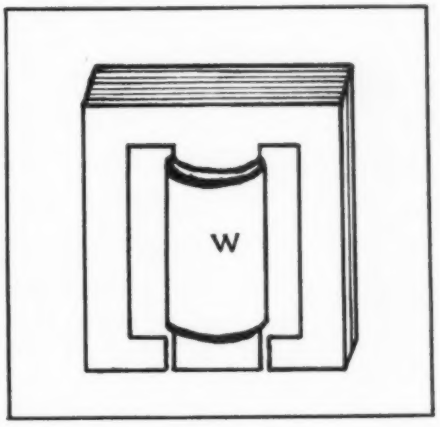

Fig. 2

This places resistance in the path of the eddy currents and confines them to the individual laminations, thereby preventing any undesirable heating of the core.

Figs. 1 and *2* illustrate two different types of closed core induction coils. In *Fig. 1*, the induction coil windings "W" surround one side of the laminated core, while in *Fig. 2*, the windings "W" are wound around a central leg, which, reduced to half its size, is continued around the outside of the windings.

Generally, closed core induction coils are placed in a plastic case and the space between the case and induction coil element is filled with an insulating compound. The ends of the coil windings are extended to suitable terminal connections on the outside.

(To Be Continued)

XUM

Here's a real PABX PACKAG

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Uses standard Leich telephones

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Here's a new PABX package that you and your customers can really get excited about. It offers better PABX service, greater traffic capacity, faster extension of calls, and a variety of service features.

The new Leich 40A PABX is designed after the famous Leich Dial System. It offers dependable all-relay switching in a modern, compact cabinet which will fit in any modern office or plant. It offers a new exclusive attendant's cabinet which extends calls quickly by key pulsing the called number. It uses regular telephone instruments.

This Leich PABX is available for up to 40 telephones with 10 trunks to the main exchange and 6 local links. Local links are not tied up on extension dialed calls to city trunks. All the power equipment is contained in the compact switchboard cabinet.

Write for this new catalogue. It describes all the features of this versatile new PABX. It is written in a way that will explain this service to your customers. Write for it today.

LEICH

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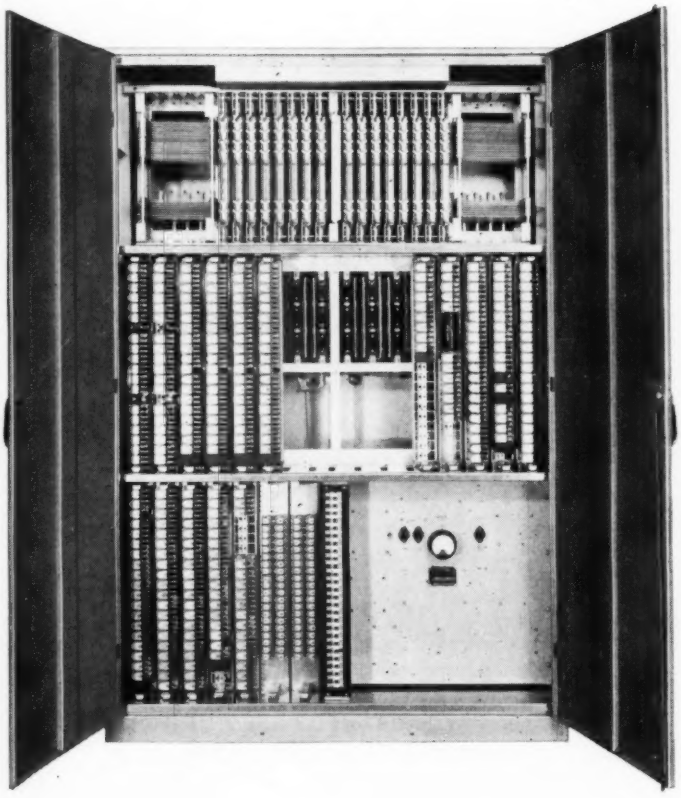

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GENERAL SYSTEM

Are YOU A Good *Collaborationist?*

By William J. Milford

COLLABORATIONIST—that's a "naughty word" today! Naughty, yes, but only in a political sense, for it describes as accurately as possible the telephone company executive who possesses qualities which are as necessary to business success today as skill and hard work.

In every job we have to collaborate (to co-labor) or to work with others. Nowhere is this more true than in the case of the telephone executive, for his ultimate success as an individual as well as in his job, is entirely dependent upon his ability to work with others successfully.

Greater job progress today comes from thinking and acting together, for there is no room for the lone wolf in business any more. The executive job, as every month goes by, becomes more and more complicated and more dependent upon the skills and abilities of others. We have no choice but to be a good collaborationist.

There are no set rules. The process itself is always done informally but planned formally. Such planning is required procedure every time the solution to any business problem directly affects the responsibility of others, and nowhere is this more true than in the executive job.

The processes of being a good collaborationist fall into three areas of maneuver for the company official. These cover (a) getting more from his assistants, (b) collaborating with associate executives in the company, and (c) working successfully with his superiors in the organization.

Since we can accomplish very little in working out problems with either executives or superiors in the organization it is best to first master the art of getting more from assistants in our own offices.

An extensive check of how a number of outstanding executives have accomplished this in their offices, supplies several steps of procedure that should be of special interest to every reader.

"When you call your assistants together, tell them why," is the advice presented by several of these men, "for it is much more difficult to handle any problem whatever its scope, if one must work in the dark as to the ultimate aims sought. One of the biggest errors in working with the men and women in one's department is in failure to give them complete background on every single problem they are called together to help solve."

Several advise best results can be obtained by always giving one's assistants a chance to do a little mulling over of major problems presented to them, beforehand. Every reader knows that his most successful problem solutions have seldom come on the spur of the moment.

It is also good procedure to point out the uncertainties connected with the project or problem in one's own mind. This opens the whole thing to more complete investigation and also gives those involved a much clearer picture of what exists in the mind of the executive himself.

Stating the several sides of every problem is also advised and when differences arise during discussions, it pays to give each man a chance to state his case fully. Without it, most important information or reasoning may never be presented.

Much better results come about when we give our assistants an easy opportunity to talk. Where reluctance exists there is never a free expression of ideas, and the very one which may solve an individual problem will never be heard.

Another wise step is to keep the level at informality as much as possible and particularly to call every individual by first name—easy informality always produces better results than stuffy dignity. Being cheerful on one's own part is of added benefit. It also is seldom advisable to make notes or keep minutes on such informal discussions unless absolutely necessary to do so, for this is a sure way of keeping one's assistants from being "gun shy."

Being willing always to open any problem for reconsideration and if action is to follow, making certain that each participant knows precisely what he or she has to do, are two final suggestions for getting more from one's assistants.

Collaboration with one's associate executives in the company is the second area, and of extreme importance to every reader in assuring future handling of his own job on a much easier and surer level. Here are some suggestions that will help to do this:

(a) Don't underestimate the importance of the other fellow. His ideas, thoughts and recommendations are usually closer to the actual problem than our own, or he wouldn't be holding his executive position.

(b) Don't take the easy attitude of a spectator in such general discussions. When this happens one invariably finds that he has a number of time-consuming problems to work out with each individual; all could have been handled at one sitting.

(c) Equip yourself with facts before the meeting. We expect authoritative evidence on any matter from our fellow executives; they have a right to expect the same thing from us.

(d) Organize your own thinking first. Do it before the meeting or the staff conference—your chance of winning points is always better.

(e) Keep the interest of the company always ahead of the interests of the department. That assures a great deal more cooperation from the heads of other sections.

(f) Develop the ability to see the

(Please turn to page 64)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

A SPECIAL telephone reporting system has recently been installed by the Bell company, at Sunnyvale, Cal. This system consists of 22 bright red reporting telephones attached to utility poles at strategic locations throughout the town.

Initially, it will be used to report fires only. However, it is engineered to take care of police calls later on.

It is interesting to note that telephone reporting systems are at last being utilized in small towns as well as in large cities. There is no doubt that we are to see many more of those systems installed in small towns during the coming years.

•

The 24-hour clock used by the Armed Services certainly has numerous advantages over the 12-hour type. With the 24-hour clock, you do not have to worry about a.m. or p.m. which is so often confusing in time tables where a.m. is in light type and p.m. in boldfaced type.

The new clock is simple when you become accustomed to it. For example: 6 p.m. is 1800 and 9 p.m. is 2100. We sincerely believe that if we could adopt the 24-hour clock and do away with daylight saving time, everyone would be happy.

It has always been a mystery to us why they cannot leave the clock alone during the summer months and merely set up the working time one hour for those who want it. This would provide the same benefits and eliminate the confusion of daylight and standard times.

•

We hear a lot about the wickedness of the big city these days, but it takes 10 telephone lines to carry messages and prayers of the Fifth Avenue Presbyterian Church in New York City.

This Dial-a-Prayer service is obtained by dialing CIrcle 6-4200 and is in use around the clock. The system has brought floods of mail to the minister, the Rev. Dr. John Sutherland Bonnell, during the two years that it has been in service.

The congregation passes out Dial-a-Prayer cards to friends and co-workers and the cards spread. Mail shows that men and women even call from other states for a voice to sustain them over bitter hours.

•

We enjoyed a demonstration in Washington, D. C., recently, conducted by engineers of the H. H. Robertson Co., of Pittsburgh, Pa. This demonstration covered all phases of Robertson Q-Floor construction and its numerous advantages that may be utilized in the provision of communication and power wiring in buildings of all types.

Q-Floor construction makes use of cellular steel beams which combine the inherent qualities of steel—light weight and great strength.

These cellular steel units are laid onto and welded to the steel framework of the building, but can also be supported by other types of construction such as concrete. They are actually the structural sub-floor.

In addition, the cells of the units function as electrical raceways on 6-inch centers which, when fed by the proper fittings, provide complete electrical and communication availability.

The combination of the cellular steel beams, 2½-inch lightweight floor fill and fireproofing is called Q-Floor because it is quick-in structurally and permits quick-change electrically.

Q-Floor construction provides practically an unlimited raceway capacity for communication and electricity wiring, plus the freedom from stagnation in conventional, old-fashioned, construction methods.

No Q-Floor-built building can ever become electrically obsolete. Outlets can be installed on the floor's surface where they are needed—and when they are needed—in a few minutes, without digging trenches in concrete or the installation of unsightly exposed wiring or conduit.

Operating telephone companies would do well to inform architects of this type floor when they are engineering communication conduit systems in new building structures of all types.

•

It appears that the business world has finally come to realize the many advantages to be gained by the proper use of the telephone conference system.

Many large concerns now follow the practice of having their executives from various sections of the country meet in the home office, from time to time, to attend important conferences which may require a few minutes or a few hours. Often, these executives must travel across the continent, and time loss and expense of considerable magnitude result.

A telephone conference system often solves the greater part of this problem by providing two-way telephone communication between all interested parties regardless of where they may be located. An additional advantage is also realized in that immediately after the conference is adjourned these people are back at their desks attending to their normal work.

Essentially, this new and recently developed telephone conference system comprises the required number of microphones around the conference table, appropriate amplifiers, and loudspeakers, with miscellaneous equipment so that these function properly at each office.

This equipment permits all parties involved in the conference to maintain verbal contact with all other parties so that anyone is free at any time to interrupt or add to the conversation in the same manner as he would were he sitting around one big conference table in the same room.

The toll charges for such a network

(Please turn to page 40)

"Harry, this Strowger equipment is really built!"

A lot of far-sighted telephone men visit Strowger exchanges these days.

And then they decide to buy Strowger Automatic.

The moment you see your first spanking-new Strowger exchange, you'll understand why. There's an impressive solidity about it that says *quality* — forcefully, undeniably. There's a smooth precision to its operation that assures fine service and less maintenance.

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are considered to be most reasonable when compared to the over-all expense of transporting the interested parties to one city, plus the executive time lost during travel.

A freight trucking company now utilizes one of these telephone conference systems to discuss its many problems regarding re-routing for trucks and repairs on equipment and other general administrative business. The leased line facilities used for this system extend over distances as great as 1500 miles.

There are several of the company's staff in each city who participate in the discussion and a microphone and loudspeaker are presently used on a press-to-talk basis. The compressor amplifier used enables this conversation to be maintained at a uniform volume regardless of line losses.

Recently, a large drug company on the West Coast installed a telephone conference hook-up in order that its main office executive organization could talk back and forth simultaneously to several distant city offices to save time and cost of travel of their executives to the home office. The equipment required for this system was provided by the operating telephone company on a leased basis.

These are only a few of the present day uses of the telephone conference system that have recently come to our attention. We predict that the use of this type of service will increase materially during the next few years, and that it will mean considerable additional revenue for the operating telephone companies which promote its use.

•

The writer thoroughly enjoyed the International Photographic Exposition held in the Nation's Capital during March 1957. Photographic equipment and materials from all over the world were on display.

We are presently the owner of five cameras, but, after having viewed this exhibit, we have a yen for at least five more.

•

Firemen in Newark, N. J., are now using electronic controls on their trucks to regulate traffic signals when on their way to a fire.

Recently-installed radio controls give the drivers of officers' cars and six fire engines control of 15 key traffic signals. As the vehicles approach the intersection, the drivers close a switch that sends beams ahead either turning red lights to green or maintaining greens as such. The beams also turn on red blinkers mounted on top of traffic stanchions.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. When constructing manholes, would you advise that the sump be placed in the direct center or at one side?

A. We prefer the sump in one corner, with the floor of the manhole sloped slightly so that it will drain dry.

If the sump is placed in the center, it is always in the way of the cable splicers and interferes when a ladder is used to enter the manhole.

•

Q. Can you tell us whether it will be possible to obtain a single frequency transmission measuring set that can be used for general testing in our telephone exchange?

A. An instrument of this type which contains an oscillator and a level-meter has recently been placed on the market. This set has self-contained switching permitting "straightway" and "loop insertion" loss measurements as well as calibration provisions.

The use of a transistor oscillator has resulted in a compact, light and completely self-contained unit.

The oscillator uses medium power transistors in a level-stabilized 1000 cps master oscillator power amplifier circuit. The output level is continuously variable.

The unit is capable of delivering 0 dbm into a 600-ohm circuit and has an internal impedance of 600 ohms. At this level, and at temperatures between 30 degrees F. and 120 degrees F., the distortion is under 5 per cent and the frequency within 5 per cent. More precise frequency adjustment or other frequencies can be provided on special order.

•

Q. What, if any, will be the advantages of electronic switching systems if they are ever developed and released for general use?

A. Actually, electronic switching systems have been developed and some are in actual use today. Some of these systems are also transistorized.

It is a little early as yet, however, to enumerate all of the advantages of this radically different switching system.

There is every reason to believe that some of the advantages to be gained by this new system are switching speed, small size, low power consumption, reliability and inherent long life, and no heat generated by the transistorized system.

If our modern electro-mechanical systems can be replaced with the electronic version when they wear or require replacement due to obsolescence, there is every reason to believe that three of the new may be installed in the space vacated by one of the old. Under present building costs, this alone would prove to be a tremendous saving.

•

Q. We plan the use of a breakdown transformer for the location of cable trouble, but understand that they are dangerous. Can you advise what precautions should be observed to insure the safety of workmen?

A. It is true that the output of transformers used for this purpose is dangerous to life as well as equipment. Necessary precautions should always be observed to make certain that no person comes in contact with the transformer leads or the cable pairs under test. All connections should always be removed from the pair or pairs under test. The voltage should be applied to the pair being flashed for only an instant by the tester. A check should then be made for a change in the resistance of the fault before it is flashed a second time. The high voltage should be applied to the pair under test for short intervals until the desired result is obtained.

Some protection can be provided to the pair being tested if a current limiting fuse or resistance is connected in series with the line when the voltage is applied. A 25-watt rheostat or potentiometer of about 5,000 ohms full resistance can be used to advantage for this purpose. The full resistance can be used for the first test and the resistance gradually reduced on succeeding tests until the desired results are obtained.

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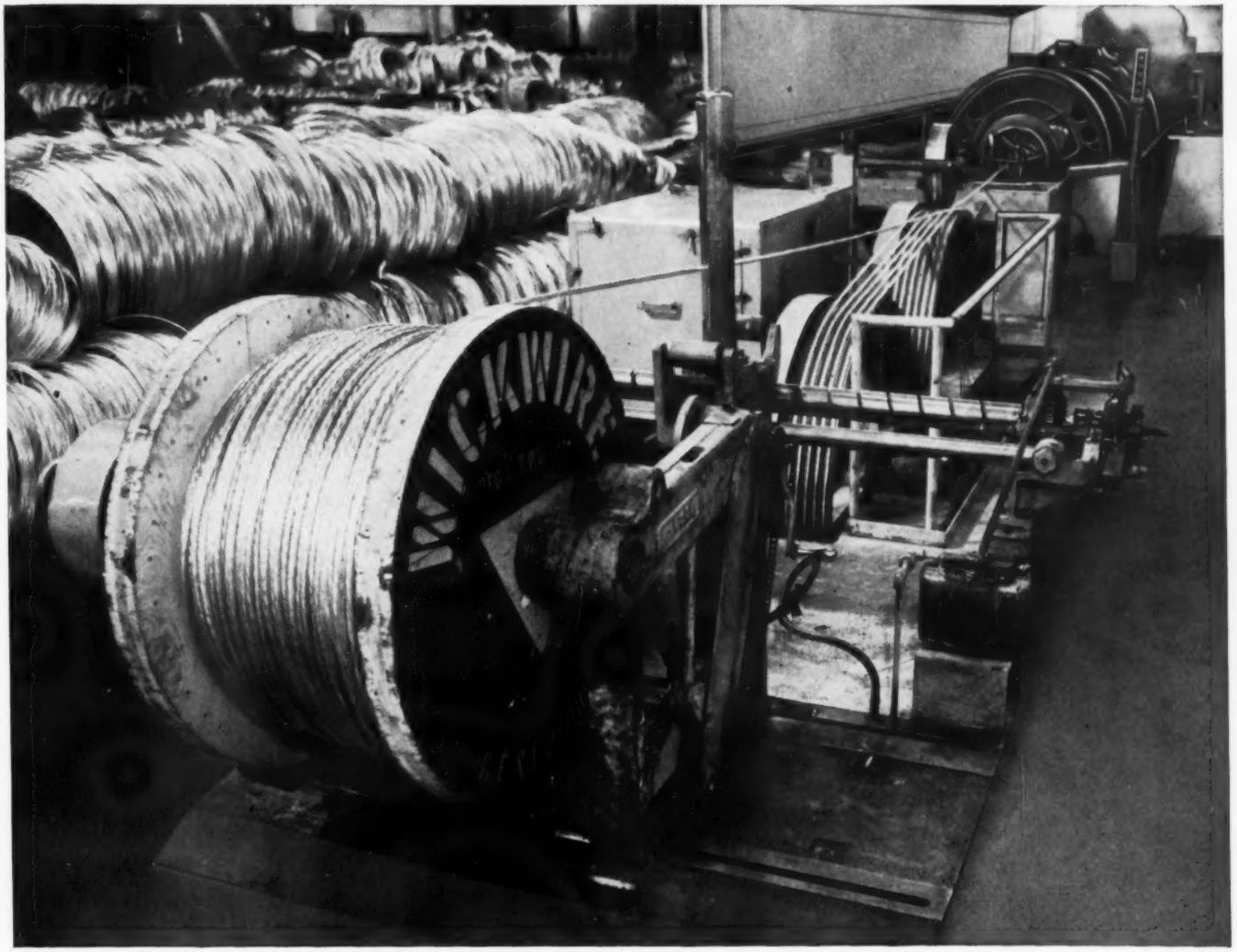

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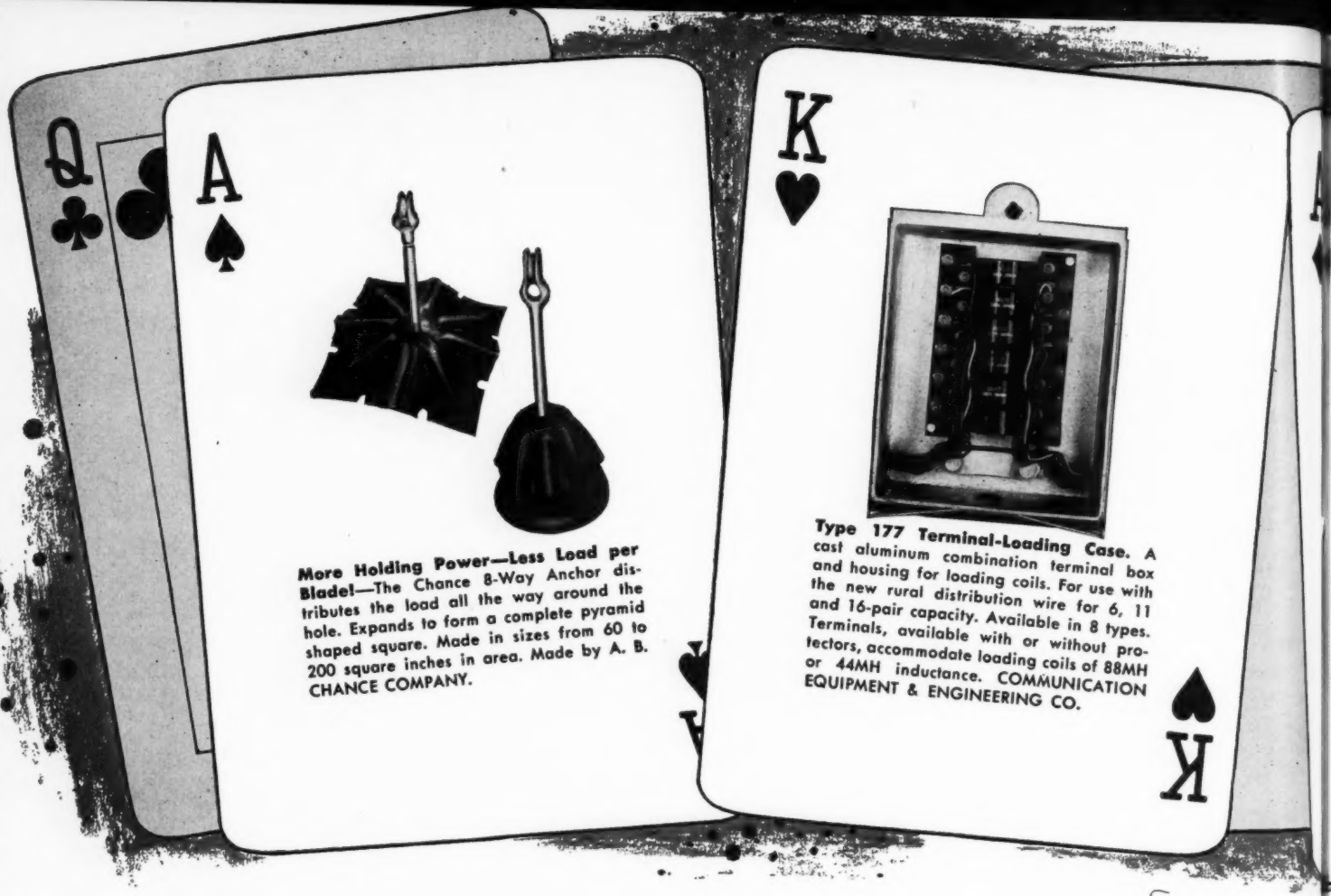

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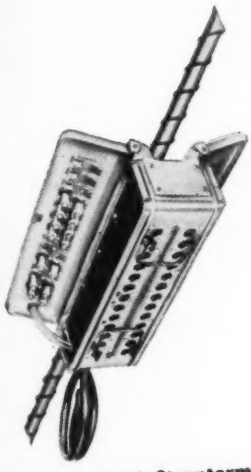

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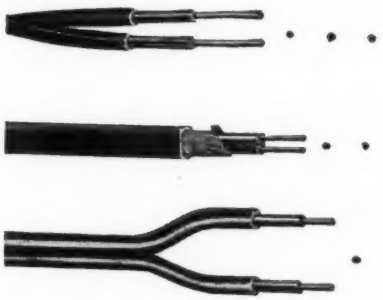

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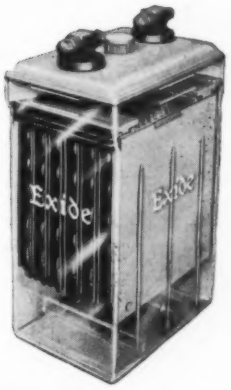

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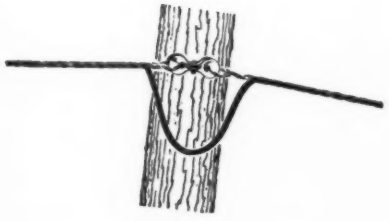

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Texans Hear Need to

Market Research · Merchandise · Sell

By R. C. RENO

THE NEED for market research and the merchandising and selling of telephone service was given emphasis by three speakers at the annual convention of the Texas Telephone Association held Mar. 28 and 29 in Dallas.

Harry Waddell of New York City, publisher of *Petroleum Week,* McGraw-Hill publication, stressed the need for telephone companies to make a market survey in their territories in order to realize the potential present and future markets for all of the types of telephone services which they offer. Such a survey should precede merchandising and selling programs, he said.

Donald C. Power, president of General Telephone Corp. and the United States Independent Telephone Association, made reference to necessity for the telephone industry to realize its opportunities to meet the demands for telephone service through market research.

R. A. Goodson of Dallas, Texas general manager of the Southwestern Bell Telephone Co., reviewed information that has been developed by the Bell System in market research, and emphasized the potential for additional revenue and service development brought out by the research studies.

Ben Smith of St. Louis, Mo., general merchandising manager, Southwestern Bell Telephone Co., with the use of colored slides which pointed out the opportunities for merchandising additional telephones in bedrooms and kitchens, emphasized the market for this type of service with many interesting comparisons of market saturation and sales made by electrical appliance manufacturers and automobile manufacturers.

Mr. Smith also discussed a survey that had just been completed by Southwestern Bell of the use of telephone service on farms, the market for additional telephone service on the farms, and the desires of the farmers for additional telephone service. The talk on rural telephone service is of particular interest to telephone companies which serve large rural markets, and many suggestions on how to improve the service, sell additional service, and increase revenue were presented by Mr. Smith.

The next two decades will be one of the most challenging and exciting periods in American economic and business history, Harry Waddell, publisher of McGraw-Hill's *Petroleum Week,* told the Texas telephone men.

He based his prediction on four factors as follows:

(1) The fast-growing population of the United States. At the present average growth of 3 million per year, the population should increase to 200 million in the next two decades.

(2) The federal government is committed to keep employment at a high level.

(3) The new American economy is one of big capital spending for plants today and plants tomorrow in a high-consumption economy.

(4) Consumers have five times more money to spend or save than they did in 1940. Our new society demands a host of new products and services to purchase with this money.

All of these factors will call for long-range planning for expansion of industrial and research plants and facilities to meet the demands of consumers, Mr. Waddell said.

Concerning the impact of this economic growth on the telephone business, Mr. Waddell said:

"For you men in the telephone business—particularly in the smaller companies—it seems to me that the challenge is essentially pertinent. Throughout much of our discussion this morning has run the theme of a faster pace of business, a faster pace of change, which bring with them a certainty of need for a greater volume of efficient communications. You have no other choice but to plan to provide it.

"Industries of all size, big and little, and the population generally, look to you to provide this increasingly complex service. Our tradition of small business—of independent, localized business enterprise—is a strong one, and all large business wants to see the small enterprises succeed and flourish. But the localized, small businesses must hold up their end of the bargain. They must grow in service and efficiency and size to meet the growth in demands made by their localities—they must plan to do this, and follow through on the plans—or someone else is going to take over the job.

"The telephone industry is obviously going to require huge sums of money from outside sources for improvement and expansion. The telephone companies that will be able to compete for that outside financing are those that keep their thinking, their management skills, their technology as modern as other industries competing for capital financing."

Mr. Waddell's address was published in full in the Apr. 20 issue of TELEPHONY.

In speaking of the 60th anniversary of the USITA and of the Independent telephone business as an organized industry, Mr. Power said that Independent companies had come a long way in the last 60 years, and that they deserved commendation for their accomplishments and progress during that time. However, he warned that there are many growing problems which still remain to be solved.

He pointed out that there is a never-ending problem concerned with telephone companies' need for greater revenues to cover operating costs and to produce an adequate return. Mr. Power recommended that telephone companies apply for increased rates whenever there is need for additional revenues,

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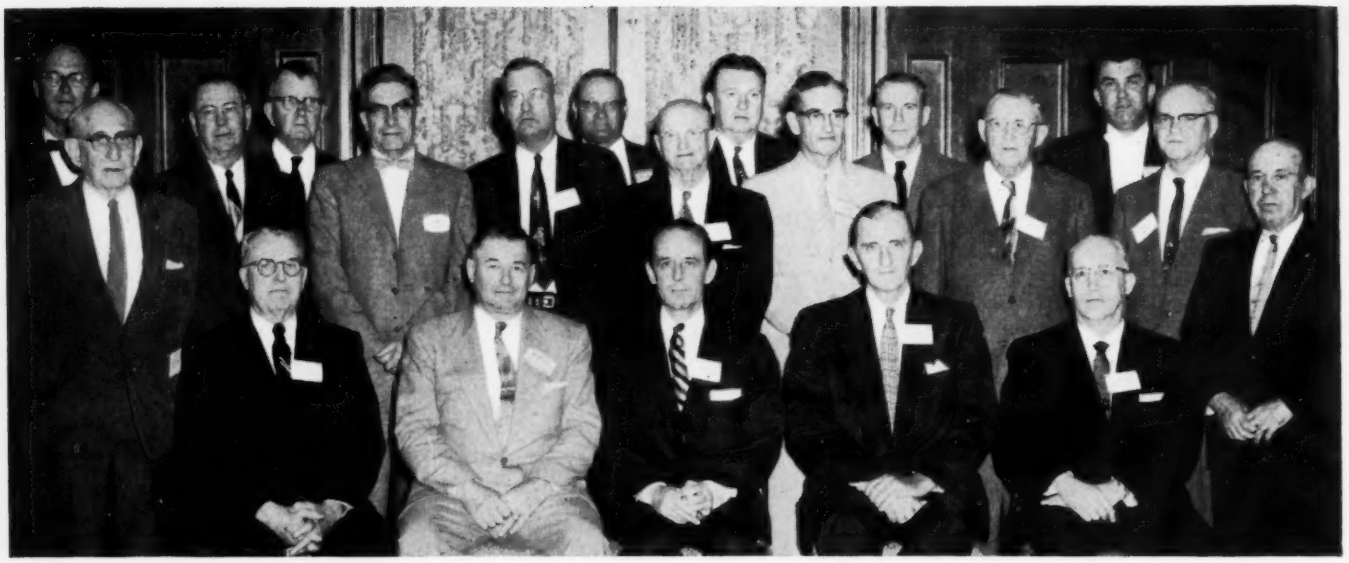

Officers and directors of the Texas Telephone Association. Front Row (left to right): J. B. Haley, executive secretary; M. A. Clay of Lufkin; D. G. Gardner Jr. of Nocona; W. S. Bain of San Antonio, and Pam D. Grinstead of Kerrville. Second Row (left to right): R. B. Still of Lubbock (guest); D. H. Comparette of Kerrville; W. G. Wright of San Angelo; J. T. Chambers of Tenaha; A. L. Robb of Electra; Guy Smelser of Bogata; W. G. Winters of Houston; Clive Haas of Big Timber, Mont. (guest), and T. A. Singer of Dimmitt. Back Row (left to right): H. Y. Price Jr. of San Marcos; Oscar Burton of Tyler; Charles A. Hendrix of Brazoria; Fabian Bearden of Baird; R. A. Goodson of Dallas, and M. S. Burton of Tyler. Directors not pictured include E. H. Danner of San Angelo; Claud Gilmer of Rocksprings; Cliff R. Dowd of Hawkins, and D. T. Strickland of Brownwood.

and also he urged them to initiate merchandising and sales programs as another good source for extra revenue. In this connection, he pointed out companies must provide the service that people want and that customers must be charged rates that will cover the cost of providing that service.

Adoption of new methods and new equipment is another "must" for all telephone companies, if they are to adequately meet the service requirements and demand of today's public, Mr. Power emphasized. In addition to providing modern service, many of the new inventions provide ways and means of cutting costs of providing service, he said.

Describing financing of improvements to and expansion of plant, as the most urgent problem of Independent telephone companies today, Mr. Power said:

"Perhaps the most urgent problem of the Independents today is financing. But, we cannot remember a time when financing was not much of a problem. There is, however, special pressure today because of the need for building and expanding plant facilities at the very time when the government's control of credit has made the cost of money higher than it has been for many years.

"Within a single year, the cost of new funded debt, even to top-grade large utility companies, has increased 1 per cent or more for annual interest. And while the government, through the tax process, shares some of this expense, the fact remains that what is left over (after such expenses) to pay dividends on stock is not only diminished but, by the same token, stocks have necessarily become relatively less attractive to the investor compared with funded securities.

"There is not a thing the telephone industry can do, of course, to ease this present so-called 'tight money' situation. It is the result of a fiscal policy deliberately undertaken by the government to check inflation. And while the pinch of 'tight money' restriction may force some Independent telephone company managements to revise their financial programs, or else pay much more for capital than they ever bargained for, the alternative of a runaway inflation could easily be much more serious and injurious. I need hardly remind you that telephone companies, just like all other public utilities operating under fixed rates, are much more vulnerable to inflation than non-regulated industry. So if, in the long run, the present high money cost is actually holding off a worse dose of inflation, we certainly do not want to complain.

"Other industries do not, however, have to face the complications posed by regulatory authorities who must pass, in many states, on Independent telephone company financing. We have here the possibility that the regulatory authority might be tempted to use its powers to interfere with arrangements management might otherwise work out for recall or redemption of high price security issues in future periods of cheaper money rates. We also have here the possibility of regulatory influence being used to affect managerial decisions of where to raise funds and how much and in what form. And, I include in that category the question of raising money from *government* credit sources, with the attendant conditions which such loans entail.

"Certainly, I would not presume to undertake nor volunteer any advice on other telephone company financing. But it seems to me that, in the present difficult and delicate financial situation for Independent company management, the least helpful thing would be the appearance of unnecessary back-seat driving from people who have no direct responsibility to company owners. Our companies are going to need all the freedom of decision, all the liberty of action, and bargaining power they can exercise in order to make the most advantageous terms on financing questions. Any unwarranted intrusion of regulatory authority is only going to make such matters more difficult."

Speaking further of initiating necessary rate increases, Mr. Power had this to say:

"This brings us to that other Siamese twin of this double puzzle of financing, and meeting revenue requirements to take care of financing. I refer to the matter of necessary rate increases. I bring this up because it is generally in the course of a rate case that Independent telephone companies are most likely to feel the pressure of regulatory authorities to go into more debt, or alter their financing programs, just for the short-term advantage of keeping revenue requirements at a minimum.

"We can all understand, of course, that the regulatory authorities are feeling increasing pressure themselves. With every rate increase, we must expect the resistance of the commissions to stiffen that much more. But when we find that rates fixed under established policies and precedents simply do not cover our revenue requirements, we must be prepared to go to the mat and ask for a review and even a re-appraisal of those policies and precedents in some cases. It is quite likely that there will be instances of this with Independent telephone companies during the coming year.

"If we check back on the total

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amount of rate increases of our telephone companies since the end of World War II and compare them with the increases in the price of other commodities and services, we will find them relatively modest. We have no apologies to make. They are still in the order of about 50 per cent or less than half the increases in general cost-of-living items. It is manifestly impossible for telephone companies to go on expanding service and meeting higher operating expenses without some measure of rate relief. I do not know of any place where we can expect to get *more* for our money, than we did a few years ago (unless it be to step on a penny weighing machine)."

Mr. Goodson, in discussing the growing population of the United States, pointed out that more people means more families and more families mean more telephones, which will result in the telephone industry putting many millions of additional dollars to work in providing services for the increased population. "We must all put forth every effort to see that these dollars are placed on a sound basis that will permit us to continue to take care of the needs of the public, but at the same time adequately protect the interest of the employes and the owners of telephone companies," he said.

Speaking of merchandising and selling telephone service, he recommended that telephone companies increase efforts to sell extension telephones, extra lines for the exclusive use of children, and the use of long distance service. Mr. Goodson emphasized that telephone service must be sold as a *convenience*, as well as a necessity, because *convenience* builds *usage*, and *usage* builds *indispensability*.

Referring to market research, Mr. Goodson reported that the Bell System recently made a detailed study of American business, covering such items as expansion, sales, price levels, rate of return and what companies give customers for their money. Also, the same study was made of all Bell telephone companies by individual states.

He said that gas and electric companies were divided into two approximately equal groups. The top half averaged earnings of nearly 7½ per cent, while the bottom half averaged a little more than 5½ per cent. The interesting point, he said, is that the companies with the higher earnings consistently charged their customers less than the companies with the lower earnings.

The state-by-state study of the Bell companies covered the effect of earnings as related to several aspects of service: The price charged customers for different kinds of service, the quality of service, the number of people waiting to get a telephone, and the speed of making repairs. In the states where telephone earnings have been relatively good over a period of years, Mr. Goodson pointed out customers pay less and get better service than they do in the states where earnings have been poor. The study also showed that in the five states with the best earnings, 86 per cent of new telephones are connected the same month they are ordered, and in the poorest five states, only 78 per cent are connected the same month.

Miss Martha Hunsaker (right) of San Angelo, daughter of the late Don Hunsaker who served as president of the Texas association, is shown as she inspects an early model telephone displayed at the Texas convention. Observing are Mrs. Ray Red (left) and Mrs. C. A. Martin Jr., wives of employes of General Telephone Co. of the Southwest.

Independent surveys, taken twice a year by Bell companies show that in the five states that have the best earnings, 91 per cent of the customers answering questionnaires say their service is excellent or good. In the five states with the poorest earnings, only 84 per cent said the same thing.

"Good service is the key to good operations and earnings and there isn't much question that customers feel they are getting better service in the top five states than in the five poorest," Mr. Goodson concluded.

In an address entitled "Living in the Motor Age," C. J. Conner, assistant chief of the Texas Highway Patrol, told of the high death toll and property loss caused by automobile accidents on the nation's highways. He said that practically all accidents could be avoided if drivers of vehicles obeyed safe driving rules and regulations and traffic laws. Human failures cause the greatest number of accidents and this means that a concentrated educational program must be conducted to teach drivers safety measures and discipline, Mr. Conner said.

He also pointed out that stricter enforcement of traffic laws must be carried on by police departments and the courts if the mounting loss of life and property is to be curtailed and eliminated.

Claud H. Gilmer, owner of the Rocksprings (Tex.) Telephone Co. and former speaker of the Texas House of Representatives, gave a report on state legislation affecting the telephone business. Mr. Gilmer is chairman of the Texas association legislative committee.

(Please turn to page 51)

A group of people is shown registering at the Texas convention. A record-breaking 700 persons registered for the convention.

"It's IRRADIATED and the dielectric strength is doubled!"

NEW . . . IMPROVED

SUPERIOR TELEPHONE CABLE

NOW contains a polyethylene tape* developed by radiation chemistry!

New, improved SUPERIOR TELEPHONE CABLE now provides three additional features to assure you of top performance under all conditions:

- **Doubled dielectric strength** . . . for greater lightning protection.
- **Practically uniform capacitance** . . . the deviation in mutual capacitance now less than 1½%.
- **Insulation "graded" to conductor sizes** . . . to match closely the universal transmission standards for loading coils and terminating equipment.

SUPERIOR CABLE is accepted by REA and conforms to REA Spec. PE14.

Use all-plastic SUPERIOR CABLE for aerial and direct burial installations . . . it's resistant to moisture, ozone, oils, acids and alkalis! Available with regular spiral shield (5 mil aluminum) or, in certain sizes at slight additional cost, longitudinal shield (8 mil aluminum).

A self-contained tape, marked at one foot intervals up to 10,000 feet, guarantees the footage you receive and lets you measure the footage you use.

For Top Performance at less cost . . . order SUPERIOR CABLE today!

"Super-Splice"

Make splices MOISTUREPROOF, WATERPROOF . . . from inside out!

New Superior "Super-Splice" makes the splice permanently as good as the cable. An REA Standard. Write for details.

*Irrathene ® irradiated polyethylene film, a General Electric product.

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- **Perfect protection**
- **Power for long life**
- **Takes punishment**
- **3 ways better**

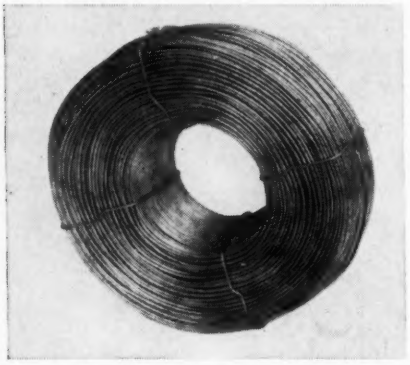
Published regularly to help you get the most out of your materials and supplies dollar

by Ralph W. Pouk, Jr., Office Mgr. and Inside Sales—Chicago

Back when I was a journalism student, I learned the most important news is always—WHO. The same is true in your business. When it comes to ordering supplies, names are the important part of the story. Behind the products you order stand the maker's name—**and** Stromberg-Carlson's name for 62 years of the finest in the field of sound. Together, these names protect you with a double guarantee on performance. They tell you you'll be satisfied with equipment you order. And of course, each order of yours is a boost for the science of telephony—because your supply business plays a major part in helping us continue our research for new and better telephone equipment. We're mighty grateful for your support. We'll do our best to merit your friendship in years to come.

11 answers to wire problems

Corrosive atmosphere—weather—extra strength—pliability. These are the special problems and needs you run into in wire maintenance. There



are 11 types of Neale spinning or lashing wire, each built to solve one or more of these problems for you.

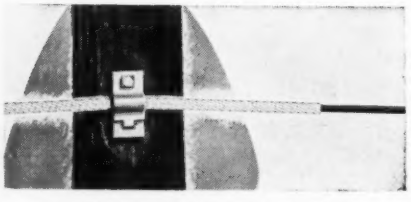
.061 Type 316 Stainless Steel
.061 Type 430 Stainless Steel
.090 Copper
.091 Copperweld
.080 Copperweld
.091 Aluminum Alloy
.080 Aluminum Alloy
.091 Galvanized
.061 Galvanized
.091 Special Soft 2.5 Bethanized C-Coating Galvanized
.061 Bethanized 1.5 C-Coating Galvanized

Protects plastic cable from pressures, abrasion

Ties, clamps, trees and other objects are rough on plastic-covered self-supporting cable.

The perfect protection is a Preformed Line Guard—available in metal or plastic.

Metal line guards are specially useful for supporting cable at poles. They are a must for tangent supports. They spread the pressure around – preventing slippage **and** preventing damage to the plastic covering.



Available in standard 6-ft. lengths. Other lengths on request.

Plastic line guards are ideal for protecting and insulating conductors that pass through trees, close to buildings, or over other lines.

Both install easily. Just wrap them around cable. You need no tools, no clamps or clips.

Battery life prolonged by strong plates.

The Exide-Tytex Battery is a flat plate type specially designed to give long life. In addition, it offers the advantages of high capacity in relatively small size. Hence it is preferred in many telephone applications.

One of the most important features of the Exide Tytex Battery is the construction of the positive plate. The exclusive, patented Silvium grid resists corrosion—prolongs battery life. Specially shaped horizontal grid bars lock the active material firmly to the plate while presenting only a minimum of exposed metal to the electrolyte. This also effectively shields the grid against corrosion and at the same time insures that every plate will have a maximum of active material in contact with the electrolyte—for higher capacity. Every fifth horizontal bar is 300% thicker in order to give the plates extra strength.

Molded plastic jars require considerably less space than needed by conventional cells. This makes it possible to put more battery capacity into a given amount of shelf area.

For rough service

You get protection plus with Cook Electric Company's type RO-9u single-circuit substation protector.

It is equipped with an H-20 protector unit mounted on a heavy-gauge formed steel bracket with weathertight grommets and a locking device for the hood.

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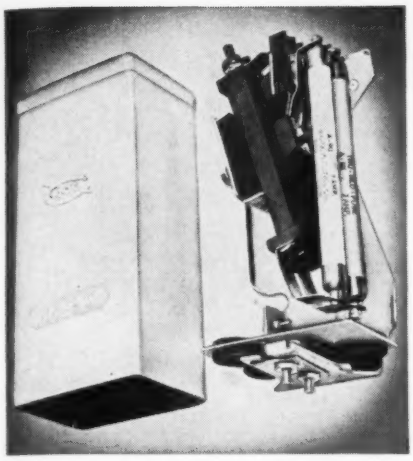
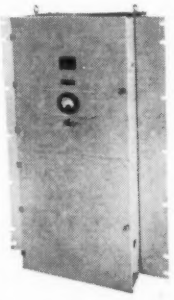


The best available protector for single-circuit substations.

The rugged construction of the housing provides unusual durability. The high quality of the H-20 protector makes the RO-9u the best unit you can buy if you want high resistance to rough handling, abuse and damage from severe electrical discharges.

Raytheon RectichargerⓇ Battery Chargers—Complete Line 3-400 Amperes

Entirely redesigned new Raytheon Rectichargers offer three major improvements:



New Raytheon battery chargers feature ± 1% no-load to full-load regulation

1. ±1% no-load to full-load stabilization prevents battery overcharging, minimizes gassing, lengthens battery life.

2. No audible hum at output terminals.

3. Most compact units on the market—wall or rack mounted.

Automatically compensated for rectifier aging, Rectichargers offer high efficiency, completely automatic regulation. No moving parts and self-protecting circuitry assure minimum maintenance, long life. Single and three phase, 3-400 amps.

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The last afternoon of the convention was given over to three workshops—Plant, Commercial and Traffic.

Taking part in the Plant Workshop were Francis Winters and W. T. Reichel, both of Houston; Goerge Hamburger of Copperweld Steel Co.; R. E. Payne, REA field engineer; Ben Averyt and Archie Sherrod of the Texas Highway Department; M. E. Barnes of Brownwood, and O. K. Hitchcock of Sweeney.

Participating in the Commercial Workshop were A. R. Rucker of Palestine, and Ben Smith of Southwestern Bell Telephone Co.

Those taking part in the Traffic Workshop were: Mrs. Winnie Burnett of Brownwood; C. A. Martin of San Angelo; Ezra Lowry of Brownwood; Hazel Harris of Brady; Betty Page of Bryan; Pearl McDonald of Sherman; Hazel Holley of Palestine; Hiram Jones of Tyler; John P. Smith of Brownwood, and N. T. Dunlap of Dallas.

The convention re-elected the following directors: M. S. Burton and Oscar Burton, both of Tyler; J. T. Chambers of Tenaha; D. H. Comparette Jr. of Kerrville; C. R. Dowd of Hawkins; C. H. Gilmer of Rocksprings; C. A. Hendrix of Brazoria; Guy Smelser of Bogata, and W. G. Wright of San Angelo.

R. A. Goodson of Dallas was elected a director to fill the vacancy caused by the resignation of W. L. Lindholm.

Hold-over directors are: W. S. Bain of San Antonio; Fabian Bearden of Baird; M. A. Clay of Lufkin; E. H. Danner of San Angelo; D. G. Garner Jr. of Nocona; H. Y. Price Jr. of San Marcos; A. L. Robb of Electra; T. A. Singer of Dimmitt; L. W. Spencer of Dumas; D. T. Strickland of Brownwood, and W. G. Winters of Houston.

The directors re-elected the following officers: President, Mr. Gardner; first vice president, Mr. Clay; second vice president, Mr. Bain; treasurer, Pam D. Grinstead of Kerrville, and executive secretary, J. B. Haley of Austin.

Economic Freedom

"Economic freedom is the freedom to risk everything on an idea and get into the thick of competition, in the hope of building a profitable enterprise. By contrast, socialism discourages risk-taking, stops competition, and profits hardly anyone."—Highland (Ill.) *News Leader.*

REA Approves Loans in Kentucky, Texas

Rural telephone loans in the amount of $224,000 were approved to borrowers in Kentucky and Texas the week of April 14, the U. S. Department of Agriculture announced on April 23. Details of the two loans made by the Rural Electrification Administration follow:

Mason County Telephone Co., Maysville, Ky.; $119,000, fourth loan (April 18).

The borrower plans to provide additional trunks to supplement and improve the present service between exchange areas, and to increase the number of toll trunks for more adequate long distance service.

The four REA loans total $726,000 with which the borrower will be able to offer new and improved service to 1,062 rural subscribers. All of the exchanges are in operation and serve about 900 subscribers. They are located at Dover, Fernleaf, Lewisburg, Mayslick and Washington.

Ruth Kehoe is president and manager of the Mason County Telephone Co.

•

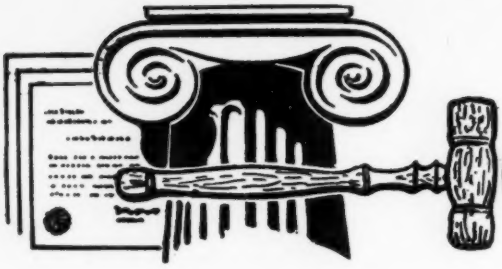
Quinlan Telephone Co., Greenville, Tex.; $105,000, second loan (April 19).

The borrower will furnish service for the first time to 117 farm families in the Shirley community. This will be the first telephone service of any kind in that neighborhood. New facilities required will include a new automatic central office building in Shirley.

A portion of the loan will be used to construct a new headquarters building for the system in Greenville.

The two REA loans to this borrower amount to $590,000. They will make it possible for the Quinlan company to furnish new and improved service to 1,644 rural subscribers. The system will consist of exchanges at Alba, Emory and Shirley. The company plans to place in service the first two automatic exchanges late this fall.

Dee Cole is president and manager of the Quinlan Telephone Co.



Courts and Commissions

Will Test Radio-Telephone For Use of Air Travelers

The Illinois Bell Telephone Co. on April 18 announced its plan to conduct tests toward providing radio-telephone service for air travelers.

The air-to-ground telephone project was disclosed after the Federal Communications Commission authorized the Illinois and Michigan Bell Telephone companies to establish such a service on a limited and strictly developmental basis in the Chicago and Detroit areas.

"The tests will get underway late this summer and should take about one year to complete," an Illinois Bell spokesman said.

The mobile transmitter and receiver atop a Chicago building will be used in the trial. New control equipment for the project will be installed in the company's long distance center.

Private planes, including those of General Motors Corp., which is manufacturing some of the equipment for the service, will be used in the testing. Eventually the telephone company plans to make the service available to commercial and military aircraft as well as to private planes.

The rates for a three-minute call will range from $1.50 to $5.25, depending on the location of the aircraft and the ground connection.

Southern Bell Given OK on Rate Raise in Kentucky

Southern Bell Telephone & Telegraph Co. was granted a $3,370,000 rate increase by the Kentucky Public Service Commission. It was $1,337,100 less than the company asked (TELEPHONY, Dec. 1, p. 60).

Higher rates are to apply to long distance calls within the state and to residence and business telephone service. They are effective immediately on toll calls and will apply to other service in the next billings.

The commission said the new schedule contains new rate concepts. For example, rates for service in metropolitan areas, such as Louisville, have been overhauled with the result that 16,000 Jefferson County subscribers will get reductions. These are subscribers whose homes are most distant from the central city and whose rates in the past have been based on their distance from the company's main office. These customers will pay less for service in the future.

Ill. Commission to Rule on Telephoning Sports Results

The Illinois Commerce Commission on May 8 will decide if telephoned results of baseball games and horse races violate its regulations.

The case is that of the Speedy Sports Service Inc., of Chicago vs. the Illinois Bell Telephone Co. It will be heard by Examiner William Helander.

Illinois Bell has denied service to the Speedy Sports company on the ground that the commission's 1950 regulations ban the use of telephones "to transmit information used for making and accepting bets or for any purpose in connection with a gambling scheme business."

The Speedy Sports company filed a protest on Mar. 20 with the commission. Its lawyer, Herman Tavins, denied there would be any illegal use of the telephone service. He said the company planned to report to its subscribers race results, baseball, basketball and football scores, but no betting odds.

Telephone company officials said it was their policy to reject all telephone applications when the circumstances appeared "suspicious."

Mountain States Raises in Montana Upheld

Telephone rate increases granted Mountain States Telephone & Telegraph Co. in 1953 by the Montana Public Service Commission were upheld on April 16 by the Montana Supreme Court (TELEPHONY, Feb. 4, 1956, p. 30).

A prevailing opinion written by Justice Wesley Castles concluded that the high court's job "is to give effect to the legal acts of the other two departments (the executive and the legislative), not to supervise them."

Chief Justice James T. Harrison and Justice Albert H. Angstman concurred. The latter, in a separate opinion, agreed with a statement by the commission that "a popular decision would be to deny any increase, but popular decisions cannot be considered."

Justices R. V. Bottomly and Hugh R. Adair dissented, reiterating their earlier stands in the companion Montana Power Co. natural gas rate case. Both the telephone and gas rate increases had been challenged by Arnold H. Olsen when he was serving as state attorney general.

In allowing the increases on Aug. 5, 1953, the commission estimated they would give the company $1,288,000 more gross annual income. The company estimated the net increase at $595,500. The increased revenue had not been impounded by the court, as in the case of the disputed natural gas rate increases, which the high court recently upheld.

The opinion by the high court in the telephone rate case specifically affirmed a Nov. 21, 1955, ruling against Olsen by Judge W. W. Lessley of Bozeman in Lewis and Clark County district court. Olsen had earlier won reversal of a previous trial court ruling when the state supreme court held he was entitled to bring the suit, as state attorney general, challenging both the telephone and gas rate raises.

Olsen had contended the increases were "unlawful, unreasonable and unjust." Lessley ruled the telephone rate boosts were "lawful, reasonable and just."

The commission valued the property at $29,680,000, and set a return of 5.8 per cent as "fair and reasonable." On this basis, the company claimed the increase should have been even larger. Castles noted that "over 50 per cent of the rate increase revenue must be paid the government in taxes."

Although conceding that Montana laws do not "establish a formula for arriving at fair values," Castles noted that the law does require that a value be found.

"We can find no error," the opinion said, "in the procedure of the court in allowing evidence of cost of reproduc-

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Aerial and Duct are R. E. A. listed. Both Aerial and Duct and Direct Burial Cable utilize polyethylene insulation, aluminum shield and high molecular weight polyethylene jacket for top electrical values. Available in #26, #24, #22, or #19 AWG in 6 through 404 pairs.

EXCHANGE AREA CABLE

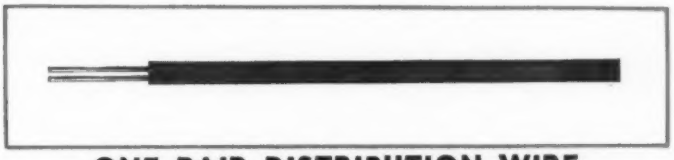
Conductors insulated with high molecular weight polyethylene and jacketed with color coded, weather resistant vinyl provide good transmission values at low cost. Available in either #19 or #22 AWG with 3, 6, 11, or 16 pairs cabled over a high molecular weight polyethylene insulated high strength galvanized support wire.

RURAL DISTRIBUTION WIRE

The rugged weather resistant vinyl insulation over the conductors is fully color coded. This construction, designed for block distribution, serves best where low cost rather than low attenuation is the prime consideration. Available in #24 AWG with 6, 11, or 16 pairs.

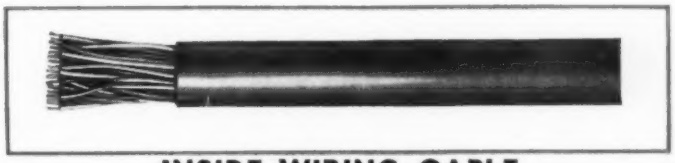
URBAN DISTRIBUTION WIRE

A high molecular weight, weather resistant polyethylene extrusion encompasses the parallel conductors. A raised ridge tracer provides polarity identification. The high strength conductors make possible long spans on lateral branches or drop runs. Available in #14 or #12 Copperweld or .083 galvanized steel.



ONE PAIR DISTRIBUTION WIRE

Solid, soft drawn bare copper conductors fully color coded with heat resistant polyvinylchloride insulation. All pairs twisted with varying lays to minimize cross talk and cabled to insure maximum flexibility. A tough, water resistant vinyl jacket in either brown or ivory provides good conductor protection for exposed insulation. Rip cord construction prevents damage to conductors in stripping. Available in #24 AWG with 6, 12, 16, 21, 26, 51 or 76 pairs.



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tion (new, less depreciation) to be admitted as evidence of value."

"Three qualified witnesses," the majority opinion continued, "testified, and their testimony was uncontroverted; that a rate of return of not less than 6 per cent was necessary, and that a rate of return of 6½ to 7 per cent would be reasonable."

The opinion declared, however, that the commission has the authority to fix a rate of return as it does the rate base or value.

Olsen, the high court said, "failed to make any showing that the commission's order is unjust, unreasonable and unlawful in its consequences."

Points Up Need for More Service in Sheriff's Office

In an editorial which recently appeared in the Rockford (Ill.) *Labor News*, may lie an idea for the sale of more telephone service—to city, county and other government offices, especially law enforcement departments.

The stand taken by the Rockford paper was critical because of a lack in telephone facilities in the sheriff's office. A sensationalized lead paragraph told of an automobile accident, following which a passer-by tried to telephone for an emergency first-aid squad for the seriously injured occupants of the car. Observing that delays in reaching the sheriff's office could cause deaths, the *Labor News* went on to say:

"With only two telephone lines into the ever-bustling sheriff's office, taxpayers from the mushrooming fringe area of Rockford and throughout the county have about the same odds of placing an immediate call through to the sheriff as they would have a turn at using a rural-style 10-party line where most subscribers are . . . (gossips).

"Even the most casual of observers at the county's busy law enforcement headquarters knows that the two telephone lines are almost constantly in use with just routine calls of the office."

The sheriff agreed in an interview that the telephone facilities in his office are insufficient, but stated it wasn't a matter of getting equipment, but a matter of shortage in personnel.

Maine's Relocation Bill

A bill to require reimbursement of utility companies for moving their facilities when necessitated by construction of interstate highways was passed by the Maine Senate on April 18 in disagreement with an unfavorable report from its highways committee. The measure had not yet been acted upon by the House.

Georgia Independent's Rates, Financing Gain Approval

The Chickamauga Telephone Co. on April 11 was authorized to raise rates $11,852 annually by the Georgia Public Service Commission. The day before the commission approved the company's issuance of $125,000 of 20-year 5½ per cent first mortgage bonds and 750 shares of $100 par common stock.

The bonds are to be secured by a first mortgage and trust indenture held by the Citizens & Southern National Bank in Atlanta, Ga.

Approved rates (including toll-free service from the High Point exchange to Chattanooga, Tenn.) are as follows:

	Chickamauga	High Point
One-party business	$6.00	$13.50
Two-party business	5.00	11.15
Five-party business	4.00	9.00
Multi-party business	3.25	——
One-party residence	3.75	5.25
Two-party residence	3.00	4.15
Five-party residence	2.50	3.25
Multi-party residence	2.25	——
Rural multi-party:		
Business, 0-2 miles	3.75	5.50
Residence, 0-2 miles	2.75	3.05
(for each additional 2 miles or fraction thereof)	0.25	0.25
Mileage charge on urban service extended to the rural area— (for each ¼ mile or fraction thereof beyond the base rate area:		
One-party	0.40	0.40
Two-party	0.20	0.20
Five-party	0.08	0.08

Minnesota Independent Asks Permission to Sell

Arthur A. Rudloff, president of the Lake Crystal Telephone Co. on April 25 announced that, subject to approval of the Minnesota Railroad & Warehouse Commission, he has sold his company to a new corporation being formed as a subsidiary of the Mankato Citizens Telephone Co.

Mr. Rudloff states that conversion to automatic of the exchange at Lake Crystal will proceed, with a tentative date of Aug. 1 for the cut-over to the new equipment. Mr. Rudloff will remain in an advisory capacity during the completion of work necessary for the cut-over and for such time thereafter as his permanent plans will permit.

The Lake Crystal company now serves 976 subscribers in two exchanges at Lake Crystal and Cambria. The area served is approximately 25 per cent of Blue Earth County.

Resigns Commission Post

Lowell Gamble, director of the utilities division of the Wyoming Public Service Commission, has resigned effective May 1, it was reported on April 19. He has accepted a position with Montana-Dakota Utilities, Inc., Minneapolis, Minn.

Roy Hendershot has been named acting director of the Wyoming commission in his place, the Associated Press reported.

OKs EAS Discontinuances, Three Sales in Nebraska

The Nebraska Railway Commission on April 17 gave permission to the Northeast Nebraska Telephone Co., South Sioux City, to discontinue extended area service (EAS) between its South Sioux City exchange and Clearwater, Neligh, Ewing and Elgin.

Clearwater is an exchange of the Clearwater Telephone Co.; Neligh of the General Telephone Co. of Nebraska; Ewing of the Public Telephone Co. of Arnold, and Elgin of the Northeastern Telephone Co.

The commission also authorized the Northeast Nebraska company to purchase property of the Clearwater Telephone Co., Ames Creek Telephone Co., Obert; and the Beaver Valley Telephone Co., Bartlett.

In another extended area case, a proposal was denied which would have discontinued EAS arrangements between Bennet and Hickman, Palmyra and Panama. Bennet and Panama are exchanges of the Lincoln Telephone & Telegraph Co., Hickman of the Hickman Telephone Co., and Palmyra, the Palmyra Telephone Co.

The commission also denied the proposed extending of area service from Bennet to Lincoln.

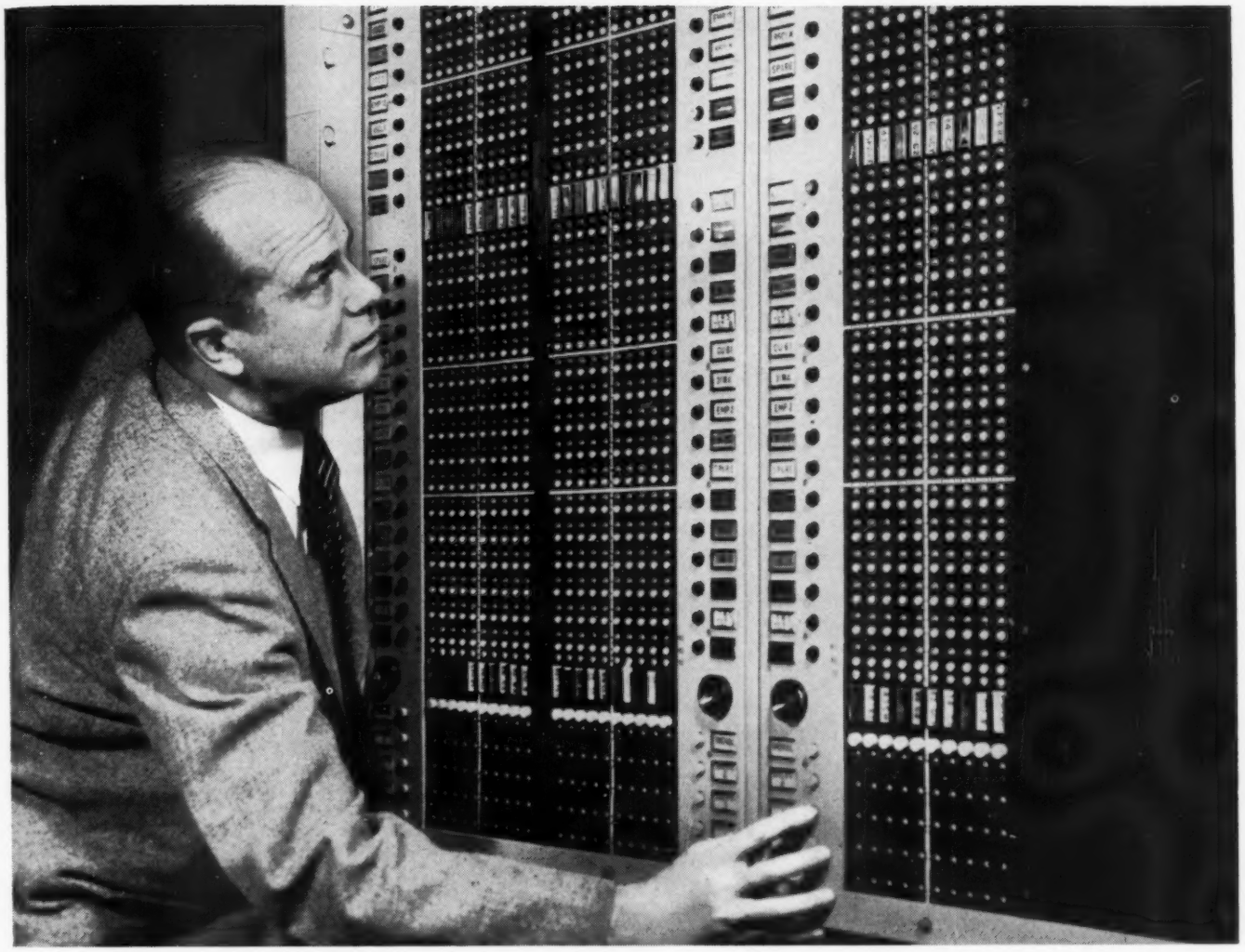
FCC Refuses Rehearing on Sale of Ill. Independent

The Federal Communications Commission on April 7 denied petitions filed by Harry Booth, Chicago attorney, for rehearing of the FCC's approval in early January, of the purchase of the Manhattan (Ill.) Telephone Co. by the Illinois Bell Telephone Co. (TELEPHONY, Oct. 13, p. 40).

The commission dismissed the pleading by the Business Men's League of the U. S., stating that there was no showing that the league was a party in interest, but discussed the issue raised for an individual Illinois Bell subscriber by Mr. Booth.

In rejecting the view that the purchase price is excessive because it is higher than original cost, the commission said it has issued numerous certificates where the price was comparable to reproduction cost less depreciation.

"In such cases, where there appeared to be definite service advan-



Bell Laboratories engineer Cyril A. Collins, B.S. in E.E., University of Washington, demonstrates new TV switching control panel for black and white or color. Complex switching connections are set up in advance; in a split-second a master button speeds dozens of programs to their destinations all over the nation. Special constant-impedance technique permits interconnection of any number of broadband circuits without picture impairment.

Telephone science speeds TV enjoyment

Telephone science plays a crucial part in your TV entertainment. An interesting example—one of many—is the latest TV switching center developed at Bell Telephone Laboratories.

Switching centers control the transmission of programs which come to your local TV station over Bell System facilities. To be available exactly on cue, programs must be switched at high speed and with very great accuracy.

To create the new switching center Bell Laboratories engineers borrowed from the switching control art which handles your dial telephone calls. They developed a special control panel which puts complex switching patterns within the easy grasp of one man. By pushing buttons, he sets up—and double-checks—forthcoming network changes far ahead of time. On cue he presses a master button which sends the programs racing to their respective destinations around the nation.

To connect the broadband circuits, the Laboratories engineers developed a new video switch which operates on a constant-impedance principle. The new switch permits the interconnection of any number of circuits, without the slightest impairment of transmission quality.

Thus the technology which serves your telephone also works for your TV enjoyment.

BELL TELEPHONE LABORATORIES

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

tages to the persons to be served," the FCC said it has felt that "the question of absolute propriety of the standard by which the purchase price was determined should not preclude a grant of a certificate, particularly in view of the control exercised by the commission over the accounting to be performed by the purchaser in connection with the transaction."

New York Independent Gains Authority for Rate Raise

The New York Public Service Commission has accepted a tariff amendment filed by Vernon Telephone Co. designed to increase rates by an estimated $6,900 annually, effective May 1.

In seeking permission to increase its rates, the company reported that its plant investment has increased from $94,000 in 1950 to $255,000 at present. In order to improve service, it has eliminated 10-party service in its rural territory, providing one-party and four-party service within its base rate area, and five-party service in points beyond.

It reported also that it has just completed the installation of a 20-line addition to the automatic equipment at its Vernon exchange and that a further 100-line addition, equipped initially for 50 lines, will be completed by Sept. 30.

Evidence submitted by the company indicates also that its operating expenses for the year ending April 30, 1958 will exceed those of 1956 by an estimated $7,000, an amount approximately equal to the additional revenues to be derived from the rate increase.

The company expects to be serving more than 1,000 stations by the end of this year as compared with 600 in 1950.

Independents To Play Up 60th USITA Anniversary

The week beginning Sunday, Sept. 8 will be observed as *Independent Telephone Week*, as established by proclamation of President Donald C. Power of the United States Independent Telephone Association (See page 19). The 4,400 Independent telephone operating companies are urged by USITA to join in celebrating the 60th Anniversary of organized telephony and the birthday of the national Independent association.

Independent companies are to mark the observance by such activities as holding open houses, running appropriate publicity and advertising in local newspapers and company publications, addresses by company personnel before service clubs in Independent territory. Manufacturers of telephone equipment will participate, and a committee is preparing a special exhibit for the USITA national convention at Chicago next October when a series of special events will highlight the celebration.

The Telephone Advertising Institute of Chicago, and J. M. Mathes, Inc., New York advertising agency handling the USITA's national advertising, will have available advertising material for the use of Independent companies in observing the 60th anniversary. This will include newspaper advertising mats and news releases, posters, bill stuffers, etc. It is understood that Telephone Advertising Institute also will have available suggestions for the promotion and handling of open houses.

Members of the USITA board of directors and state telephone association secretaries have been requested to ask their respective governors to issue proclamations setting aside the week of Sept. 8 as *Independent Telephone Week*.

The anniversary observance will be under the general direction of the USITA Diamond Jubilee Committee composed of Chairman Carl D. Brorein of Tampa, Fla., chairman; Thomas A. Boyd of New York City, and R. A. Lumpkin of Mattoon, Ill.

Sell 46 Colored Telephones In 260-Telephone Tex. Town

How many exchanges are there where nearly one out of every five telephones is a colored instrument and almost one of every three of these color telephones was sold by one individual?

Those are the questions that the sales staff of General Telephone Co. of the Southwest are asking after final results came in on employes' sales efforts in connection with the recent conversion of the company's Miami, Tex., exchange to automatic operation.

A total of 46 color telephones were among the 177 different sales reported and since the town boasts only about 260 telephones, these sales make the percentage of color to total telephones run almost 18 per cent.

The leading salesman in total items as well as in the sale of the new colored instruments was Raymond L. Cotter, a lineman who normally is located in Memphis, Tex., but was temporarily assigned to Miami to assist in the preconversion work. Mr. Cotter sold 31 different items, including 14 color telephones, 12 residence extensions, two 13-foot cords, a buzzer, a button and a hard-of-hearing instrument.

Under General's scoring system for sales, he totaled 197 points which represents over one-fifth of the 902 points which were credited for all sales in Miami during the period.

A dinner was given to honor 10 employes involved in the sales campaign, all of whom were plant department personnel and most of whom were members of special construction crews. Highlight of the dinner was the presentation of a cigarette lighter to Mr. Cotter by W. A. Leigon, division plant superintendent, in recognition of his individual sales efforts.

In addition to the 46 colored telephones, the employes also sold 49 upgrades; 20 residence extensions; 15 metallic rural residence; 12 wall jacks; six 13-foot cords; five each of business extensions, four-party residence service, and No. 47-A monophones; four retractile cords; two residence one-party service; and one each one-party business service, two-party residence, metallic rural business, buzzer, button gong, 9-foot cord and a paystation.

The Miami, Tex., exchange of General Telephone Co. of the Southwest converted to automatic operation recently with nearly 18 per cent of its 260 telephones being colored instruments as a result of concerted sales efforts by a group of employes led by Lineman Raymond L. Cotter. Mr. Cotter is shown here displaying the 31 different items which he sold. Among the items were 14 color telephones and 12 residence extensions.

XUM

BIG HIT

AUTOMATIC'S "80-SERIES" PAYSTATIONS

Anyway you figure it, the new AUTELCO paystations will be a "box office" hit with users. One reason is they're in color—8 different colors, as well as black. Paystations in color are easier to see—and they actually add attractiveness to their surroundings.

Equally important: AUTELCO paystations now have all the famous Type 80 Telephone features. These include an easier-to-hold handset, moistureproof Koiled Kord and greatly improved true-to-life transmission.

Maybe you've already guessed that AUTELCO "80-series" paystations have what it takes to really boost revenue. For all the facts, plus full ordering information, write for Circular 1877. Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

A MEMBER OF THE GENERAL TELEPHONE SYSTEM

ONE OF AMERICA'S GREAT COMMUNICATIONS SYSTEMS

IN THE NATION'S CAPITAL

Concluded from page 18

had contended that it was entitled to a return of 6.75 per cent on a rate base of 100.3 million dollars.

One of the noteworthy changes in the latest Kentucky commission order is the abolition of the old individual exchange rates. Southern Bell will be permitted to apply a new method in Kentucky (used in other states) to establish one set of uniform state-wide rates to exchanges of similar classes.

Another innovation was a reduction in intrastate toll rates for station-to-station calls. This was ordered with a view to promoting wider use of station-to-station services.

The Kentucky commission urged a public training program to encourage station-to-station calls so that subscribers will be more inclined to dial their own long distance calls instead of calling the operator. The rates on person-to-person long distance calls were increased. The old Sunday and night time reduction was eliminated on such calls.

The Kentucky commission frowned at the repeated applications for rate increases, pointing out that seven had been filed in the last 11 years, six of which have resulted in an aggregate increase of $8,514,000 a year.

Noting that the staffs of both the telephone company and the commission have been working hard for many months, the commission stated "that it is apparent that such frequent applications for increased rates are not in the public interest."

In Montana a rate increase for Mountain States Telephone & Telegraph Co. of $1,288,000, which had been approved by the Montana commission ever since August 7, 1953, was finally upheld by the Montana Supreme Court. During that time the case has been kicking around in the state appellate courts, after persistent litigation by the attorney general of the state, who claimed that the commission was wrong in authorizing a rate increase based on the fair value of the company's property (fixed at $29,680,000 and yielding a 5.8 per cent return).

The attorney general felt that the U. S. Supreme Court in the Hope Natural Gas case in 1944 changed the law in Montana so as to make the fair value doctrine outmoded. The state supreme court held, however, that this was not so and upheld the state commission's use of a fair value rate base.

A special concurring opinion of the court contained the following interesting comments:

"At the outset, we point out that in determining the questions before the court neither the trial judge nor the members of this court can discharge their duty by merely voting on whether they as individuals prefer the old or the new rate. They do not make a choice to either stand with the people or with the power company.

"The action of the courts must be governed by recognized principles of law as applied to the facts, and this court must render its decision in writing stating the grounds of the decision.

"We mention these matters simply to indicate that we agree with the board when it said, 'a popular decision would be to deny any increase,' but popular political decisions cannot be considered."

In Louisiana, the state public service commission has ordered Southern Bell to start refunding by check instead of crediting the subscribers for a rate cut ordered last Aug. 1 and recently upheld by the state supreme court by an unanimous verdict of 6 to 0.

The commission had ordered a 20 per cent reduction on intrastate long distance calls and cut the cost of paystation calls from a dime to a nickel. Its order of last summer had been held up, pending court appeal by the company that ended when the state supreme court recently sustained the commission.

Southern Bell subsequently sought to have the toll charge reduction trimmed from 20 per cent to 14.1 per cent, claiming it would result in an income loss of more than 5 million dollars rather than the $3,940,000 cut the commission ordered. Refunds on long distance calls will go automatically to all subscribers, but telephone users must apply for the nickel return on paystation calls since last Aug. 1. No procedure has been established for the refund on paystation calls.

The Louisiana Supreme Court's opinion makes no mention of the 4.8 per cent rate of return found by the commission, referring to a 5.31 per cent return during the test period before giving effect to the reduction. The company contended that if the latest rate had been in effect during the test period, the return would have been only 4.16 per cent. But the court apparently did not think it necessary to work this out.

The court also accepted the hypothetical 45 per cent debt ratio adopted by the commission, falling back on the general comment "that there seems to be no prescribed formula for the fixing of rates."

Southern Bell's parent company, American Telephone & Telegraph Co. (which furnishes equity money to the subsidiary) sold some six million shares of common stock at $100 a share last year. It earned slightly over $12 a share on the increased number of outstanding shares and on this basis the cost of this capital approximated 12 per cent or more.

Assuming that the cost of selling debt approximated 4 per cent and assuming that the adoption of the hypothetical 45 per cent debt ratio was warranted, the 1956 cost of new capital at this ratio would still appear to work out around 8.4 per cent, although about half of this amount was allowed by the court.

Ohio Editor Asks Only Fairness in Rate Case

As mayors in certain communities served by Northern Ohio Telephone Co., Bellevue, organized to combat the rate raise sought by the company (TELEPHONY, Dec. 1, p. 55), one editorial writer took the opposite tack and pleaded for fairness on the part of the Ohio Public Utilities Commission in deciding the case.

The editor inquired whether the public, including the mayors, knows enough about telephone rate-setting to make a just decision. And he went on to ask: "Why not let the commission, which is in a position to know these things, do the investigating and deciding . . . ?" The editorial read as follows:

"We note with interest that the mayors of communities served by the Northern Ohio Telephone Co. are in the process of banding together to fight the company's proposal, now before the Public Utilities Commission of Ohio, to raise substantially its rates and charges for telephone service.

"In a way we can't blame the various communities too much for organizing to oppose the increases. It's natural to be against increases sought by the utilities companies, and then too, everyone is naturally against paying more for goods and services.

"Especially now, with the cost of living gradually increasing, folks are particularly conscious of any price rises proposed for any of the everyday services they consider essential.

"But is this attitude fair to the telephone company? With the cost of their operation unquestionably going up month by month, it would seem that they should be entitled to raise the price for their services to the point where they can make a fair return on their large investment.

"Why should the telephone company work for little or no profit, when the rest of us are continually getting higher prices and wages in order to keep up our standard of living and thrive?

"The group which opposes the telephone rates increase claims the company seeks an inequitably high increase

BICC execute Major Telecommunication Projects ANYWHERE IN THE WORLD

Consult BICC about the Planning Manufacture and Installation of Telecommunication Projects.

We have had long experience in this kind of work in many parts of the World. A few of our recent contracts are briefly described below.

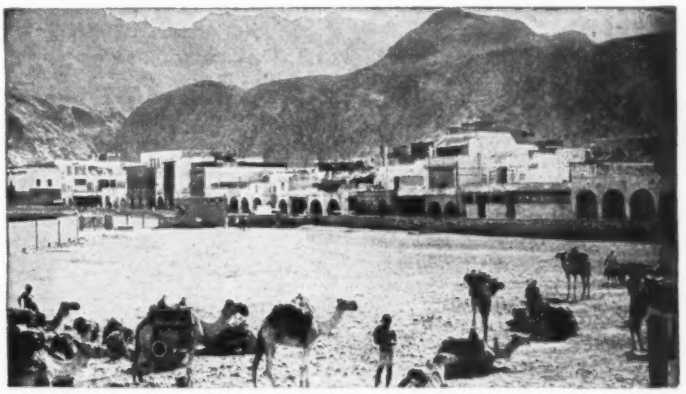
The following types of BICC Cable are in continuous manufacture for telephone administrations in many countries: coaxial and balanced pair cables for carrier working, long-distance audio cables, paper or polythene insulated exchange-area distribution cables.

We shall be pleased to give you further information from our nearest Branch Office or from our Headquarters in London.

AUSTRALIA *Electrification of the New South Wales Railway Western Line has necessitated a completely new track-side cable scheme covering the 34 miles from Sydney to Penrith. The main cable comprises 6 pairs for 24 channel carrier working and 60 audio pairs for local telephone and control purposes. Many of the audio pairs are terminated at railway stations, signal huts, power substations, etc., in order to provide local facilities. The installation was undertaken by BIC Construction Co. for the N.S.W. Railways Department, the cable being manufactured by BICC.*

NEW ZEALAND *BICC have supplied a long-distance cable between Auckland and Hamilton for the New Zealand Post and Telegraph Department. BIC Construction Co. supervised the installation and undertook the progress and transmission testing. The cable consists of 4 coaxial tubes to provide long-distance carrier or television circuits, together with a surrounding layer of 54 audio pairs for intermediate local circuits. The pairs are loaded. The cable is buried direct in the ground for most of its eighty-mile route, except when passing through towns where it is laid in ducts.*

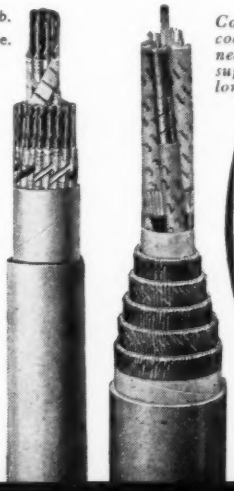
VENEZUELA *BIC Construction Co. have undertaken the jointing and supervision of installation of a 448 pair 20 lb. long-distance audio cable to improve the telephone service between Caracas and Maiquetia. With a route length of approximately seventeen miles, the cable runs wholly in ducts along the side of a newly-constructed auto-road linking the capital town of Caracas with the coast. This contract has been undertaken for the Compania Anonima Nacional Telefonos de Venezuela, the cable being manufactured by BICC.*



ADEN *To extend existing facilities and to cater for the Colony's growth, a new distribution network has been installed comprising approximately 44 miles of BICC cables specially protected against soil corrosion.*
The new network provides an increase of 3,000 lines and consists of paper-insulated local distribution cables ranging from 15 to 200 pairs, the larger sizes being of the unit twin type. A short balanced and loaded audio cable was also installed to link the Town with the new refinery site at Little Aden. This contract was undertaken for the Aden Posts and Telegraph Department.

Left: a BICC jointer at work on a coaxial cable, cutting the tubes ready for jointing. Two typical cables for carrier working are illustrated on right.

BICC manufacture every type of telecommunication cable and undertake their installation — anywhere.



24 channel 24 pair 40 lb. carrier telephone cable.

Composite cable with 4 coaxial tubes for 960-channel or television, with 18 supervisory pairs and 390 long-distance audio pairs

BICC

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in the price for its services. But are these people authorities on telephone rates? By what right do they claim to be the judge of what these rates should be, to give the company a fair and equitable return?

"We find it hard to believe that any community, (most of which themselves are these days currently fighting for increased operating funds through increased taxation of one kind or another) is in any position to squawk when any utility asks for a fair increase in rates.

"The organization opposing the telephone increase is currently engaged in trying to collect 25 cents per head from all subscribers of the Northern Ohio Telephone Co. in all exchanges of all the districts in its growing system.

"It is figured that an average of 25 cents per head would raise more than $24,000 with which to fight the telephone company. Quite a tidy sum for someone to use over a period of a few months in an attempt to knock off the company's request!

"We have no particular brief for the telephone company, except that we think they are entitled to some increase in prices, the same as everyone else in these days of rising costs and prices.

"And we think they are entitled to the same consideration for their proposed rate increase by the Public Utilities Commission of Ohio as the gas and electric companies, and other telephone companies, are always given.

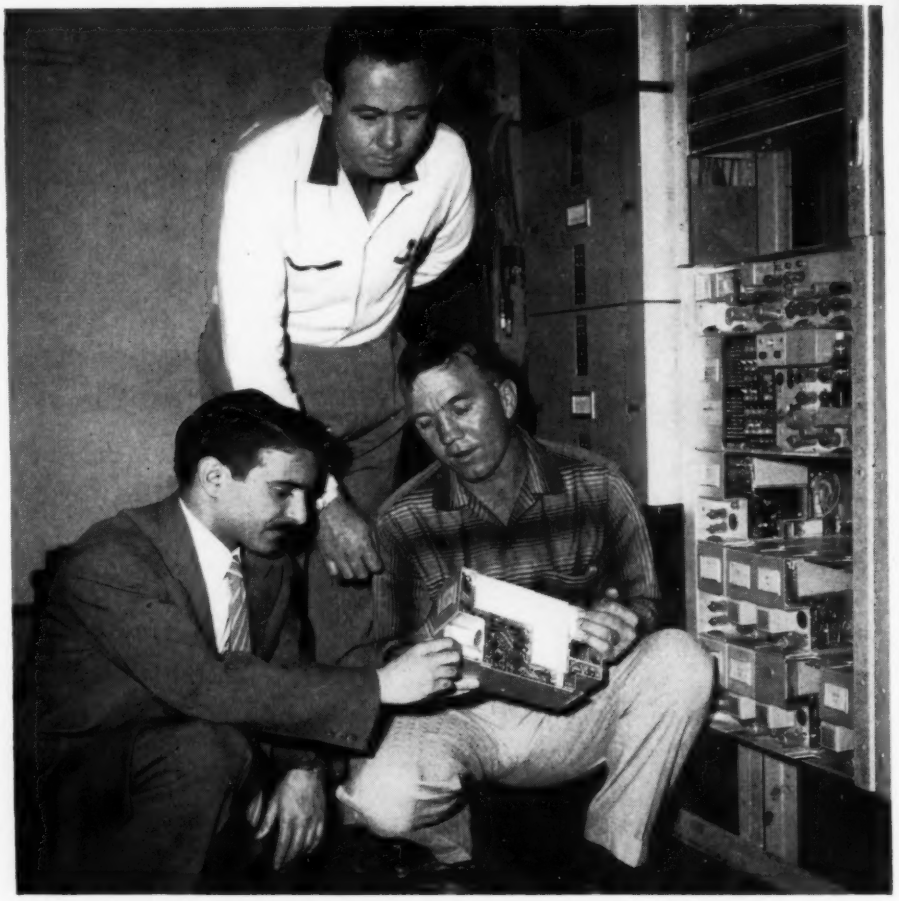
"After all, isn't the public utilities commission in a better position to pass judgment on the company's requested increase than is a group of municipal officials, from a dozen or two towns, both large and small? Many of them actually don't know any more about what telephone rates should be than we do.

"We know it is the popular thing, to oppose a utility when it seeks an increase in rates, but is it the fair thing to do?

"Why not let the PUCO, which is in a position to know these things, do the investigating and deciding, without a lot of hullabaloo and excitement?

"And don't say we wrote this because we get a lot of business from the telephone company. We do not. We get the same amount of business from them that other small town papers and print shops get, we suspect, and no more.

"We just think the telephone company deserves fair consideration for its request, without a lot of baiting and name-calling."



Simak Yahya Nadimi (left) of Tehran, Iran, is currently spending two months in training with The Southwestern States Telephone Co. He is shown receiving explanation on the operation of carrier equipment in the Brownwood, Tex. exchange from Charles Shipp, switchman (kneeling at right), and Charles Gamblin, division installer (standing). Nadimi is supervisor in charge of operating and maintaining the present carrier telephone system in Iran. He is in the U. S. for a six-month study of telephone company organization and operation and a special study of carrier equipment. His tour of study is arranged under the technical assistance training program of the Federal Communications Commission. Aim of the program is to assist in the rehabilitation and expansion of the communication system in Iran and other countries. A large expansion program is planned in Iran.

North Dakota Association Holds 49th Annual Meeting

The North Dakota Telephone Association on April 9 completed its most successful annual meeting in many years, reports Secretary-Treasurer Gordon B. Brown. Registration at this 49th annual convention in Fargo was 163, and it was the consensus that this was the finest program in years, according to Mr. Brown.

The presidential report was presented by James Shepard of Walhalla. Featured speakers were: Dr. Gordon Volkenant, consulting engineer of Minneapolis, who spoke on "The Electron —The Atom—In Your Future." Carl Rosenvold, sales manager of Suspension Insulators, Inc., spoke on "A New Look at Rural Telephony," and Frank C. Mirgain, dean of the School of Engineering, North Dakota Agricultural College, discussed the "Training of Engineers."

A discussion of legislative problems in North Dakota was presented by R. A. Patterson of Bismarck, N. D., district manager of Northwestern Bell Telephone Co. Commissioner Martin Vaaler presented a message from the North Dakota Public Service Commission.

The group elected Don Brooks of Hazen as a new director, and re-elected Mr. Brown of Enderlin and John Nilsen of Nome. Hold-over directors are: F. W. Ahlgren of Parshall; R. R. Borman of Fargo; W. G. Matson of Stanley; J. F. Shepard of Walhalla; W. R. Williams of Minot; V. R. Youll of Devils Lake; Frank Solberg of Langdon; Tilman Overmoe of Hillsboro.

The directors in turn re-elected Mr. Shepard president, and Mr. Brown secretary-treasurer. Mike Redding of Devils Lake was elected vice president.

Streukens Heads Section 3 REA Telephone Loans

Appointment of George L. Streukens as head of Section 3, Telephone Operations & Loans Division, was announced on April 26 by the Rural Electrification Administration. Section 3 includes the states of South Dakota, Nebraska and Kansas.

Mr. Streukens succeeds Rolland W. Mars who recently accepted another position in government service.

Prior to his appointment as section head, Mr. Streukens was an REA field representative and had served as an assistant section head in the Telephone Operations & Loans Division. He joined

the REA staff in 1950. Before that he was employed by the Pioneer Telephone Co., by the U. S. Employment Service and by the U. S. Department of Labor. He served three years in the Army and attained the rank of major.

Two Independent Engineers Join New York Central

The New York Central Railroad Co. recently appointed John E. Schmitt as communications engineer, western district, with headquarters at Cleveland, O.

Mr. Schmitt was formerly telephone engineer with the Eastern Illinois Telephone Co. in Rantoul, Ill.

Effective May 6, Richard L. Straw will become communications engineer, eastern district, with headquarters at Syracuse, N. Y.

Mr. Straw was formerly transmission engineer with the General Telephone Co. of Wisconsin with headquarters in Plymouth, Wis.

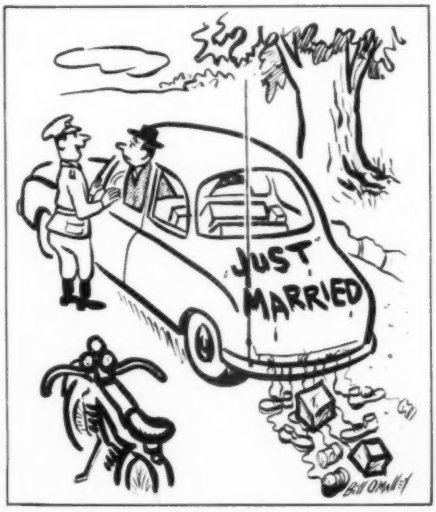
Plan Iraq-Saudi Arabia Telephone Link

A telephone line will be opened between Iraq and Saudi Arabia soon, the Iraq director-general of posts & telegraphs, announced on April 18.

He said it was decided that the link would be completed in May during the state visit to Baghdad by King Saud of Saudi Arabia.

He added that a new line would be established between Iraq and Syria due to the increased demands for long distance calls between the two countries.

With the completion of this line, he said, Iraq will have two lines with Syria, a direct one and the present line through Jordan.



"Oh, ticket? No sir—I just wanted to use your phone."

Standard types of COMMUNICATION EQUIPMENT

Radio Engineering Products is currently producing a number of types of equipment, electrically and mechanically interchangeable with standard Bell System apparatus. Complete equipments of the following types, and components for these equipments are available for early delivery.

CARRIER-TELEPHONE EQUIPMENT

C5 Carrier-Telephone Terminal (J68756). A kit for adding a fourth standard toll-grade channel to existing C systems is available.
C1 Carrier-Telephone Repeater (J68757)
121A C Carrier Line Filter and Balancing Panel
H Carrier Line Filter and Balancing Panel (X66217C)

CARRIER-TELEGRAPH EQUIPMENT

40C1 Carrier-Telegraph Channel Terminal (J70047C)
140A1 Carrier Supply (J70036A1, etc.)
40AC1 Carrier-Telegraph Terminal
Grid Emission Test Set (J70047D1)

VOICE-FREQUENCY EQUIPMENT

V1 Telephone Repeater (J68368F)
Power Supply (J68638A1)
V1 Amplifiers (J68635E2 and J68635A2)
V3 Amplifier (J68649A)
V-F Ringers (J68602, etc.)
Four Wire Terminating Set (J68625G1)
1C Volume Limiter (J68736C)

D-C TELEGRAPH EQUIPMENT

16B1 Telegraph Repeater (J70037B)
10E1 Telegraph Repeater (J70021A)
128B2 Teletypewriter Subscriber Set (J70027A)
Composite Sets, several types

TEST EQUIPMENT

2A Toll Test Unit (X63699A)
12B, 13A, 30A (J64030A), and 32A (J64032A) Transmission Measuring Sets
111A2 Relay Test Panel (J66118E)
118C2 Telegraph Transmission Measuring Set (J70069K)
163A2 Test Unit (J70045B)
163C1 Test Unit (J70045D)

COMPONENTS AND ACCESSORIES

255A and 209FG Polar Relays
Repeating Coils, several types
Retard Coils, several types
184, 185, 230A and 230B Jack Mountings

VACUUM TUBES

101D, F & L	323A & B	396A
102D, F & L	328A	398A
104D	329A	399B
205D	336A	400A
274A & B	350A & B	408A
281A	355A	120A Ballast Lamp
305A	393A	121A Ballast Lamp
310A & B	394A	

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CABLES RADENPRO, MONTREAL

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- An entirely new one man test set for locating aerial wire troubles. Easily and quickly locates all troubles from dead shorts and grounds to grounds and shorts with resistances that run up into several hundreds of thousands of ohms.
- Positive location of trouble spots: Locates the position of grounds and shorts and crosses in a minimum of time.
- Simple to use: One man with little or no previous experience can locate high resistance shorts, crosses and grounds.
- No need cut or open lines to locate troubles: With the Telo Cater Parallel test set it is no longer necessary to open your lines at test points, or cut your lines to determine the direction of your trouble.
- Not necessary to put line out of order while testing.
- Ideal for carrier line maintenance: Keep your aerial wire plant used for carrier in top notch shape.

CUMMINGS & NOTT, MFG.
P. O. BOX 143
PHILOMATH, OREGON

PLANNING TODAY FOR TOMORROW

Concluded from page 24

There is many a dollar's worth of that sort of inspired business waiting just behind a customer's door. But it is up to the local company to knock on that door. We cannot expect the customers themselves to come around and tell us what they need, or can use, when they do not know what we have to offer.

Of course, co-ordination will increase the effectiveness of such efforts. When local companies are able to follow up national and other publicity programs, such as our USITA operations, with parallel efforts at the local level—there is bound to be a cumulative effect. And it will pay extra dividends of public relations benefits to all who participate.

In conclusion, I find that I have talked so much about problems, that some of you might get the impression that I look on telephone business as one big headache. But that is only because I have stayed on your convention theme of planning. And what is planning, after all, except the problem of dealing with problems.

As for the brighter side, I yield to no one in my own optimism about the great future of our Independent industry and all who take part in it. Remember what I said a few moments ago about our destiny. I believe in that destiny and I trust you do, too. I believe, moreover, that these problems will be solved, even though we all know that their places will be taken by other problems. That is part of the challenge and satisfaction of the Independent telephone business, and all of you must enjoy it somehow or you would not be here today.

Ohio Installer Aids in Capture of Prisoner

A quick thinking installer in Columbus, O., helped capture a Columbus Workhouse prisoner who escaped from the Health and Safety Building while being treated for a cut hand.

Charles Arnett, working on an installation near the scene of the escape, saw the commotion. He climbed a utility pole and with his test set called police. The prisoner, whose criminal record dates back to 1954, was apprehended and public recognition was given Arnett in the *Columbus Evening Dispatch* for his important role in the capture.

The Awful Truth

A total of 40,000 Americans were killed in 1956 traffic accidents.

Answers to Questions On Page 20

(1) If the calling party hangs up, disconnect immediately. If the calling party does not hang up within about ten seconds after the busy signal is received, disconnect the front cord and give a busy report.

(2) Disconnect the front cord and give an oral busy report.

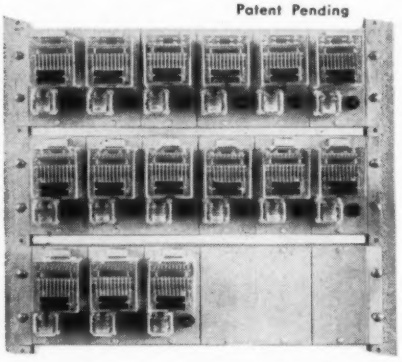
(3) Cut in about one minute after establishing connection and listen for a don't answer report.

(4) Two minutes after establishing connection, disconnect the front cord as provided for the type of connection and say to the calling party, "They don't answer."

(5) Say for example, "The store (Mason's grocery) is probably closed for the afternoon." If the calling party appears to doubt this report, add, "Shall I keep on ringing?" If the calling party requests you to continue ringing, proceed as on a regular don't answer call.

NEW
CODE-TO-SELECTIVE RINGING CONVERTER

Patent Pending



Furnishes full, ten-party selective ringing on multi-party lines. Use with present switchboard and line equipment. Existing equipment does not require modification . . . fits any standard rack. Factory wired for quick installation. Flexible for future growth.

ASK FOR BULLETIN NO. 554

Universal Controls also manufactures Digit Absorbers and Computer Intercepts.

UNIVERSAL
CONTROLS CORPORATION
P. O. BOX 13122 • DALLAS 20, TEXAS

ABC OF THE TELEPHONE

Continued from page 30

disturbed when the hole is bored for the installation of the anchor. The installation of this type of anchor is as follows:

(1) Bore a hole for the anchor at an angle approximately 90 degrees with the guy wire. The starting point for the hole can be determined by extending an imaginary line of the guy wire to the anchor location. Next, intersect this line with a second line, drawn at a 90 degree angle, starting from the anchor location and brought to the surface. The starting point of this second line, which marks the near edge of the hole to be bored, should be outward from the guy wires and in line with the pole and the point where the anchor rod will emerge from the ground.

(2) If the anchor rod is designed for the purpose, drive it into the ground in line with the guy wire. Start the rod at a point where the guy wire touches the ground. After the point of the anchor rod has been driven far enough into the hole, use the tool available from the manufacturer to hang the anchor on the rod. (NOTE: If the anchor rod is designed to be installed with the anchor in place, cut a slot from the top of the hole to the point where the rod will emerge from the hole. This slot should be filled and tamped after the installation is completed.)

(3) Pull back on the anchor rod until the anchor plate (or plates) is resting against the upper side of the hole.

(4) After the guy wire is attached to the anchor rod and pulled to the proper tension, fill the hole and tamp the backfill into place.

The completed plate-type anchor installation is illustrated in *Fig. 2A*. Another method of installing plate-type anchors, using a vertical hole is shown in *Fig. 2B*. In this instance, a hole is bored with the near side in line with a point where the top edge of the anchor will be located. Next, a rod slot or trench should be cut, if required. Then the bottom of the hole should be undercut to give the anchor a foothold in solid earth at right angles to the proposed position of the anchor rod. From this point the installation follows the procedures used when the hole is bored at an angle.

Screw-Type Anchors. Screw-type anchors are installed in much the same manner as if an oversize wood auger were being turned into the ground. The wrench type and no-wrench type screw anchors are installed as follows:

(1) Remove a shovelful of dirt from the place where the installed anchor rod will extend from the ground.

(2) Start the anchor in a vertical position. After the first few turns lean the anchor to the guy angle.

(3) Continue turning wrench type

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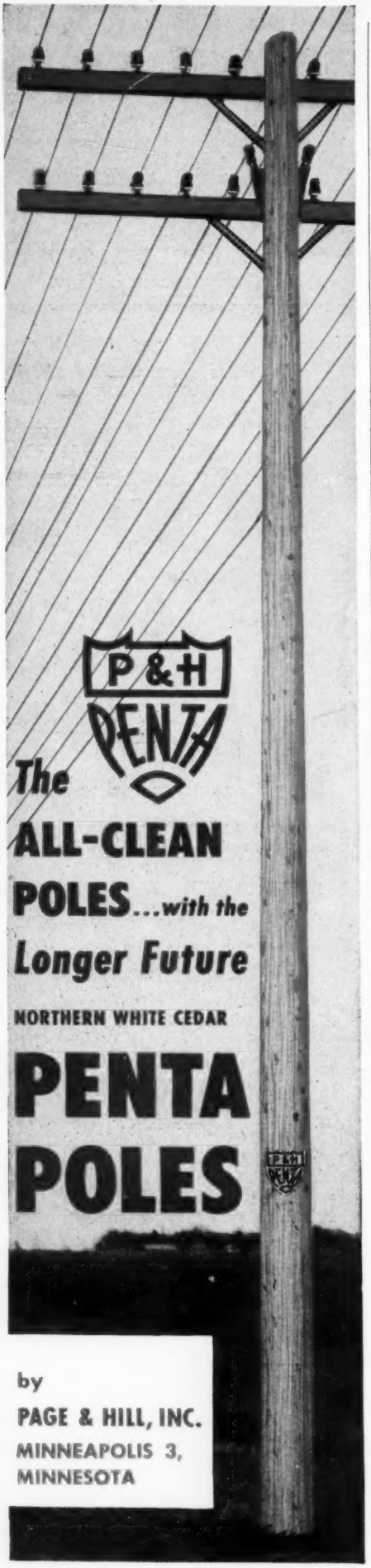


anchors with the installation wrench until the anchor is driven to the required depth.

(4) No-wrench screw anchors are started by inserting a long steel bar through the eye of the anchor rod and turning the anchor into the ground by hand.

(5) If necessary, the no-wrench anchor can be driven all the way by hand. However, special adapters are available to facilitate attaching the anchor rod to the cutter head of an earth boring machine. Once attached to the cutter head the power of the earth boring machine can be used to drive the anchor into position.

Swamp Screw Anchors. Swamp screw anchors can be started and driven with power equipment or with chain pipe tongs or pipe wrenches. Sections of pipe are added, as necessary, until the desired depth is reached. As a general rule, pull-test rigs equipped with dynamometers should be used to determine if the anchor has a firm hold in the subsoil below the marsh or swamp.

As with other type anchors, swamp screw anchors should be installed with the anchor rod in line with the guy wire. A typical swamp screw anchor is shown in *Fig. 3.*

(To Be Continued)

ARE YOU A GOOD COLLABORATIONIST

Concluded from page 36

broad picture and to make others see it—that's another good way of securing maximum cooperation from other department heads.

(g) Avoid scheming—don't make bargains ahead of time—don't maneuver before or during the staff meeting. This may be a good method of handling a single difficult situation BUT it is also a sure method of creating a score of strained relations on future problems every time it is done.

The third area of collaboration consists of working successfully with superiors in the company. When our procedures with our assistants and associate executives have been well founded this always becomes easier. They form a sort of framework for those conferences with the "big boss."

In addition it has been found good procedure for one to adopt these tactics in collaborating with the "top brass" in the company:

(a) Always be adequately prepared for the conference; it creates respect and avoids minor difficulties.

(b) Think of possible questions that will be put to you and organize the answers before the conference.

(c) Don't argue difficult points with such executives—explain.

(d) State your convictions on important points without hesitation.

(e) If any point under discussion is not clear, ask about it.

(f) Keep in mind your precise relationship in the discussion.

None of the foregoing background steps are difficult for any telephone company executive to put into effect, yet their importance to his final success are so great their value is difficult to estimate.

Using them wisely makes certain that he is a good business collaborationist—and that's the kind he has to be, to become and to remain a top telephone company executive today!

SAFETY THUMB TACKS

By John A. Bracken

Bits of safety reasoning, either pointed or flat, depending upon the way you look at them:

"A defective lineman's SAFETY strap *doesn't* give the lineman another chance."

*

"Whenever proper care is not exercised, generally it can be traced to some neglected SAFETY detail."

*

"A good formula for preventing accidents:—practice SAFETY regularly."

*

"If SAFETY rules are disregarded by some, others are apt to pattern after what they see."

*

"Through a rigid attention to SAFETY, accidents can be held to a minimum."

Jolly Joe's not so lighthearted nowadays

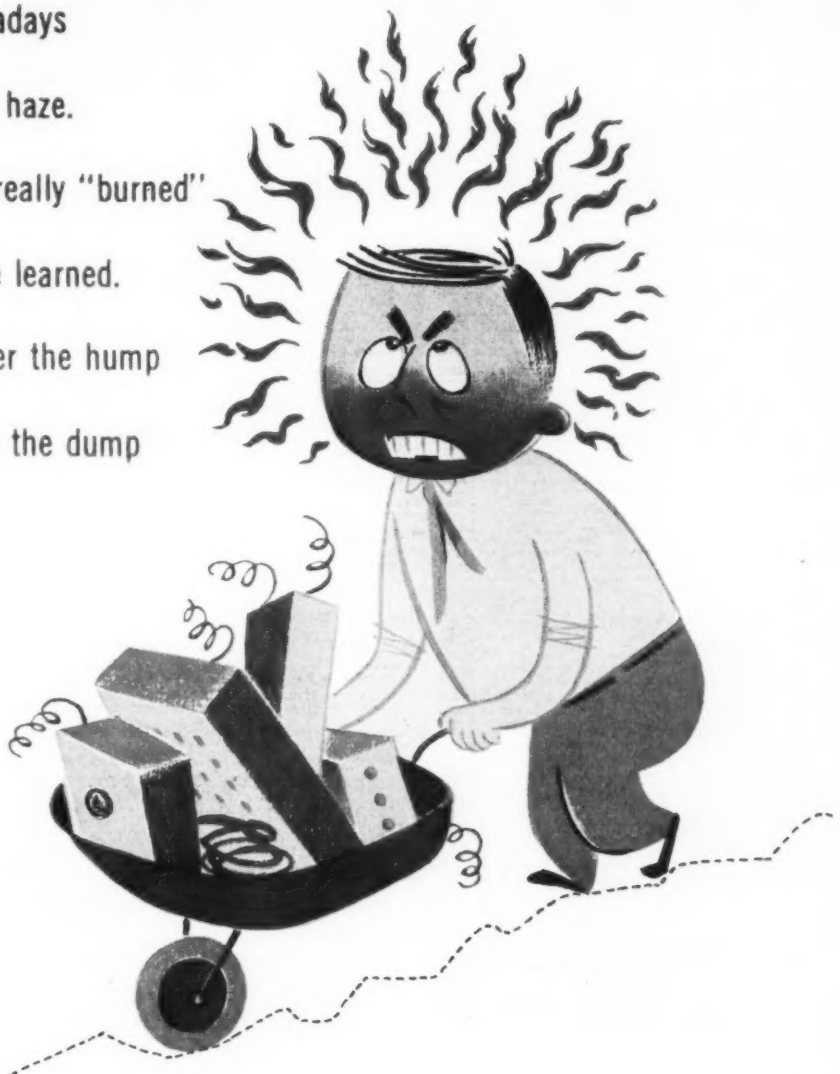
You see, he went dial in a bit of a haze.

Came Direct Distance Dialing, Joe really "burned"

For changes were far too costly, he learned.

Just when he'd thought he was over the hump

He had to consign his exchange to the dump



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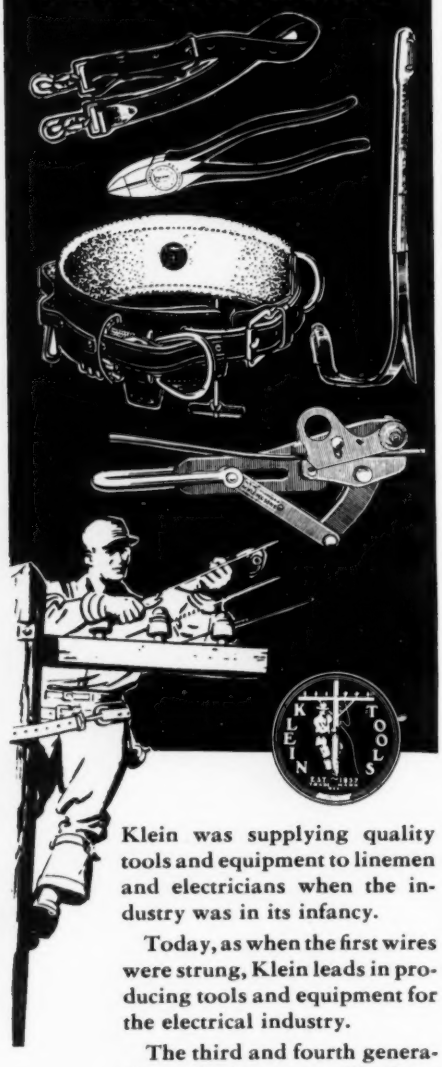

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Helpful Literature

BATTERIES — "So You're Going to Buy an Industrial Battery" is the title of a new 16-page illustrated reference booklet (GB-1788) just released by Gould-National Batteries, Inc.

This pocket size booklet outlines the significance of battery design, and the contributions of research and development to lower operating costs, greater productivity and greater profits. A four-point program for battery users describes the importance of selecting the proper battery for the job, the purpose of correct charging and handling, reasons for systematic maintenance and the value of a continuing knowledge of battery condition. Three brief case histories demonstrate the value of correct application engineering in handling battery problems.

A condensed description of Gould's "Battery Maintenance Schools" is given, as well as information on Gould's Plus-Performance Plan for achieving maximum life and performance from an industrial battery. Request HL339.

•

TRUCK BODIES—York-Hoover Corp. has issued three bulletins featuring three new truck bodies.

One bulletin—No. 940—describes the company's new Model YLW-96 line construction body, designed for two or three-man operation.

Another bulletin—No. 941—describes Model SLW-96 line construction body, designed for two-man operation.

The third bulletin — No. 942 — features the Model YMR-76 service body. Request HL340.

WIRE ROPE SLINGS — Three new folders describing suggested applications and ordering specifications for wire rope slings have been made available by the Wickwire Spencer Steel Division of The Colorado Fuel and Iron Corp.

The folders describe Wickwire's Uniflex wire rope slings, Multiflex wire rope slings and Maxiflex wire rope slings.

Uniflex slings are specially designed for applications where abrasion is an important factor. As the name implies, the body of each leg of a Wickwire Uniflex sling is a single piece of wire rope. Due to the relatively large size of the rope's outer wires, this sling can withstand severe abrasion.

Multiflex slings, made from six-part flat braids, are designed for maximum load-bearing surface area and ultimate flexibility in one direction.

Maxiflex slings provide superior flexibility in all directions. Each leg of a Maxiflex sling is made up of eight identical wire ropes braided together to form a round braid. This is the most universally used of all the braids.

Each folder describes specific applications for which each sling is best suited, with illustrations of typical applications. Request HL341.

•

CONTROL PANELS FOR MOTORS AND GENERATORS — Kato Engineering Co. recently released a bulletin which describes its line of floor mounted, wall mounted and generator

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Please have the manufacturer send me without obligation further information on the products described in the following numbers:

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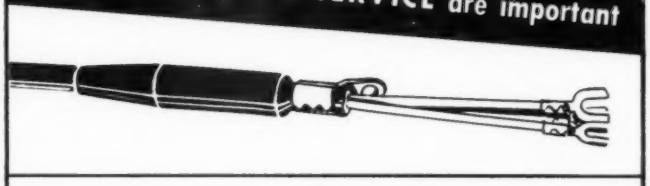

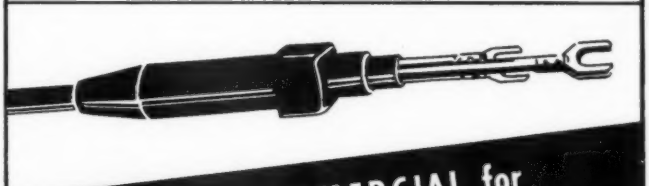

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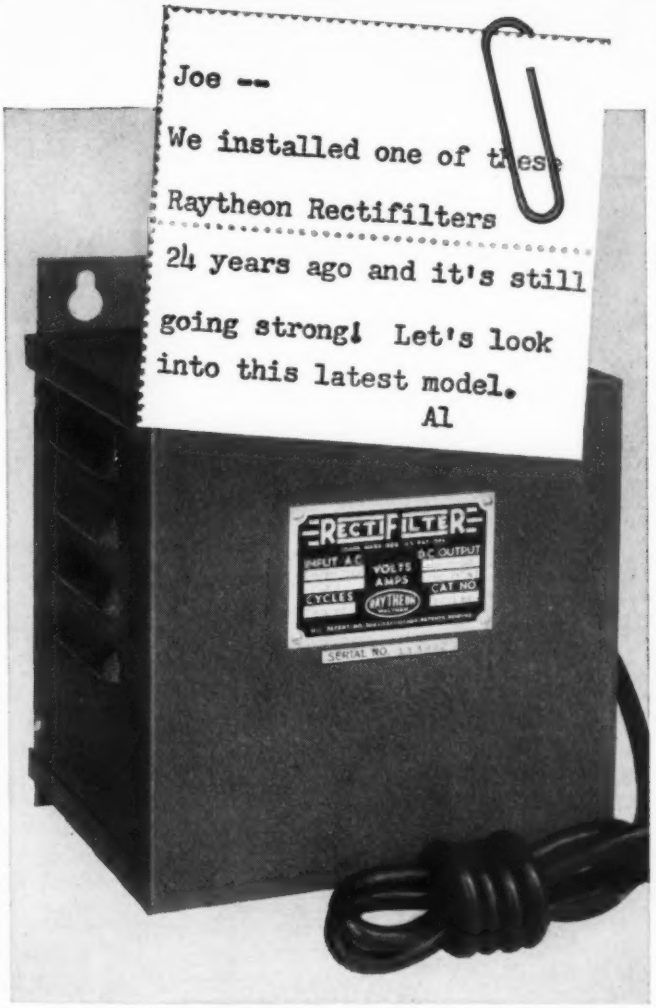

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•

KOILED KORDS—A booklet giving the typical procedure voltage measurements for the Koiled Kords signal transmitting system has been issued by Koiled Kords, Inc. Request HL343.

•

RADIO TONE SQUELCHER — General Electric Communication Products Department has published its first bulletin on its new "Channel Guard" tone squelch device, designed to reduce interference problems in two-way radio systems. The bulletin—ECR 449—describes how unwanted signals and transmissions may be avoided if the new device is installed in new radio systems or those already in use in the field. Request HL344.

•

FIRST AID CATALOG — Valuable first aid and field protection advice as well as detailed information on unit system first aid kits and components is included in a new general catalog issued by the Medical Supply Co.

Printed in three colors and profusely illustrated, the 32-page plastic bound book provides diverse information ranging from proper snake bite treatment to a chart showing correct unit system kits and supplies for various industries. Products listed in the new Catalog No. 100 include flexible unit first aid kits, specific applications kits, bandages and compresses, eye dressings, antiseptic swabs and applicators, poison ivy treatments, salt tablets, snake bite and burn first aid kits, and many other first aid items. Request HL345.

•

PORCELAIN ENAMELING—"Porcelain Enamel in Industry" is the title of a new 20-page cartoon-illustrated booklet produced by The Erie Ceramic Arts Co. The pocket-sized booklet deals briefly with the origin and development of porcelain enameling, its advantages, and unique features. Mention is made of common uses such as meter dials, telephone number plates, instruction plates, etc. Request HL346.

•

TRUCK DRIVER MANUAL—The "Driver Manual," a book prepared by the White Motor Co. for the trucking industry, has been revised and re-issued, it was announced by P. E. Tobin, vice president in charge of sales for the company.

The Driver Manual has been adopted by fleet driver training courses and has been helpful to truck owners, fleet superintendents, and drivers.

According to the company, the original manual was the first compilation of authoritative data based on the experiences of successful drivers, the teachings of authorities throughout the motor transport industry, plus a nationwide study of drivers' problems and their solutions.

The book discusses correct preparation for a trip, correct starting of the truck, correct take-off, correct road practices, correct parking and correct care. It is dedicated to America's drivers—the land transport pilots who have the enormous job of transporting so many things Americans eat, wear and use.

The book is available at $1.25 per copy. Request HL347.

•

PLAN TO RELIEVE ELECTRONIC TECHNICIAN SHORTAGE—A new plan to provide electronic technicians for employers without hiring new personnel has been announced by Cleveland Institute of Radio Electronics.

According to Carl Smith, president

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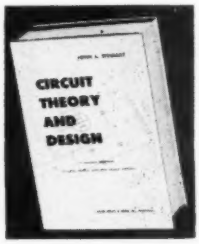

CIRCUIT THEORY and DESIGN

By John L. Stewart, *California Institute of Technology.* Stressing modern, powerful pole-zero design methods, this book applies modern network theory to the understanding of vacuum tubes and feedback systems.

The author avoids use of abstract mathematics, yet gives data and design procedures of practical significance, discussing a wide variety of specific devices. The pole-zero design methods, given in easy-to-use form, show development of design for a large variety of circuits with and without vacuum tubes, and for systems with and without feedback. This book is a *must* for anyone interested in design and research in linear systems. **1956. 480 pages. 463 illus. $9.50.**

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of Cleveland Institute, this program was developed to solve a common problem in industry today. This problem is how to use the capabilities of people in their own organizations who do the job, if only they have the necessary training in electronics fundamentals.

To solve the problem, Cleveland Institute's new employer's plan lets the employer pick his own man or men who are interested and have the aptitude for electronics work. They are then enrolled in the institute's special home study course in electronics.

Cleveland Institute guarantees to train him in the fundamentals of electronics until his proficiency is great enough to pass not only the institute's own comprehensive examinations, but the FCC license examinations as well.

Without losing a single man-hour, the employer can have a trained electronic technician at a fraction of the cost of resident training, says the institute. Each trainee has had the benefit of personal instruction; each trainee has had his knowledge of electronic fundamentals thoroughly tested and measured by institute tests. In addition he is trained until he successfully passes the FCC examination.

To explain this program, Cleveland institute has prepared a 16-page booklet titled "How to Get a Licensed Technician for Your 2-way Radio-Microwave Electronic Equipment." Request HL348.

•

TAPE CATALOG—Recently revised to include new technical product advances, this catalog is now available from the Bishop Mfg. Corp., manufacturers of tapes for permanent moisture sealing, rapid insulation build-up, permanent cable jacketing, high-voltage cable splicing and general insulating purposes.

This new catalog contains general information, recommended uses, packaging details and data charts showing test results on each product. Request HL349.

B. A. Parkhurst Named Head Of New IT&T Division

The election of Burrell A. Parkhurst as president of the newly formed components division of International Telephone & Telegraph Corp. was announced on April 17 by Edmond H. Leavey, IT&T president, who stated that this was a further step in the current reorganization of IT&T's domestic operations.

Mr. Parkhurst joins IT&T from the Waldorf Instrument Corp., where he was executive vice president. Prior to that, he served with the Reeves Instrument Corp. as senior vice president, and with the Sperry Gyroscope Co. as manager, naval ordnance department.

B. A. PARKHURST

A graduate of Stevens Institute of Technology with the degree of M. E., Mr. Parkhurst is a civil member of the American Society of Naval Engineers, and a member of the American Ordnance Association, the procurement advisory panel of the National Security Industrial Association, and the Newcomen Society of North America.

Communications Equipment Given Pakistan by Britain

Great Britain is to provide telecommunications equipment valued at 38,000 pounds for Pakistan's telecommunications centre at Haripur, it was reported recently. It is being provided under the technical cooperation scheme of the Colombo Plan, United Kingdom equivalent of the U. S. Point Four program.

The centre at Haripur caters exclusively for the training of higher grade technical staff, including engineer graduates of the Pakistan Post & Telegraph Services. The immediate plan is to provide instruction for about 300 trainees on courses varying in length from three to 18 months.

Correction

In the March 23 issue of TELEPHONY, page 64, it was inadvertently stated in a headline that the Graybar building to be built in Chicago was to be a factory. Instead, it will be a warehouse and office building.

To Strengthen Faith

"Duty performed gives clearness and firmness to faith, and faith thus strengthened through duty becomes the more assured and satisfying to the soul."—TRYON EDWARDS.

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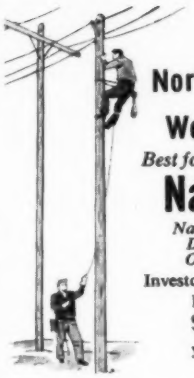

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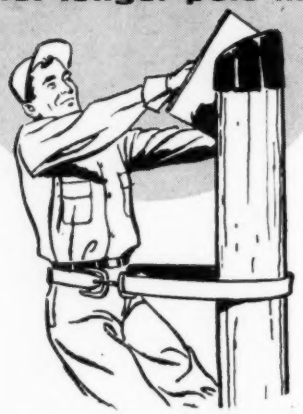

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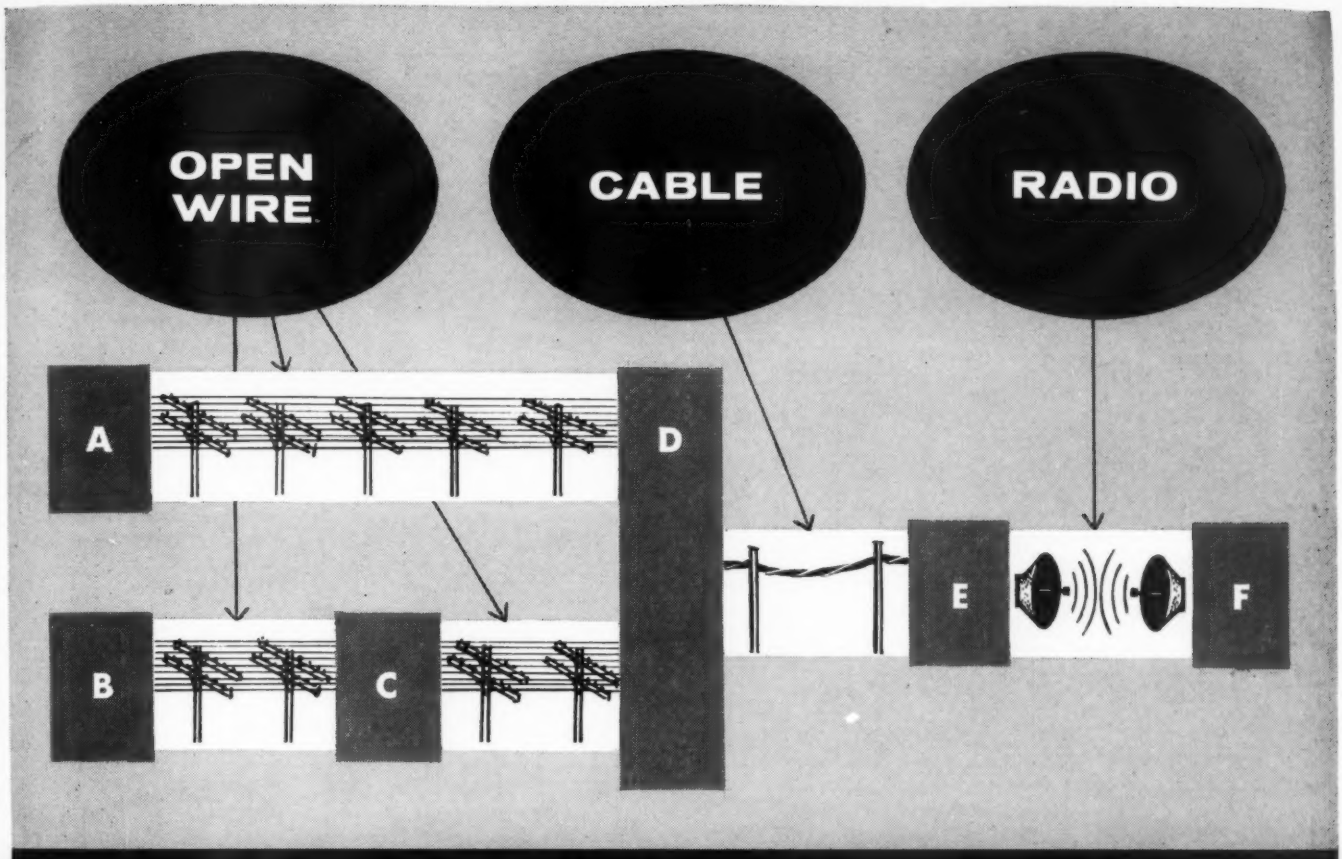

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